



ALBUQUERQUE DISTRICT WILDERNESS

FINAL ENVIRONMENTAL ASSESSMENT

18
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AUGUST 1984

US Department of the Interior
Bureau of Land Management
Albuquerque District, New Mexico

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

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IN REPLY REFER TO:

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Wilderness

August 15, 1984

Dear Interested Party:

This document is the Final Environmental Assessment (EA) for eight Bureau of Land Management (BLM) Wilderness Study Areas (WSAs) in the Albuquerque District. Preliminary wilderness suitability recommendations by the Taos and Rio Puerco Resource Area Managers for these WSAs were released for public comment in two draft documents: the Albuquerque District Wilderness Draft Environmental Assessment (March 1983), and the New Mexico Wilderness Supplemental Draft Environmental Assessment (August 1983).

The District Manager's recommendation for each WSA is displayed in the Final EA as the Preferred Alternative. The District Manager's recommendations are: to recommend partial wilderness designation for the Cabezon, Ignacio Chavez, Ojito and Rio Chama (formerly Navajo Peak) WSAs; and to recommend the four remaining WSAs (Empedrado, La Lena, Sabinoso, and San Antonio) nonsuitable for wilderness designation. These recommendations are based on the Area Manager's preliminary recommendations presented in the Draft EAs, public comments on the Draft EAs, and any additional resource information obtained during finalization of the individual Wilderness Analysis Report (WAR) for each WSA.

The information presented in this Final EA and the WARS will serve as the data base for the Albuquerque District's WSAs to be further addressed in the BLM's New Mexico Statewide Wilderness Environmental Impact Statement (EIS). Because of the large amount of material contained in the WARS, we are not distributing them to everyone on the mailing list. If you have not received the WAR volume and would like a copy, please contact our Public Information Officer, Jeff Radford at (505) 766-2455.

Preparation of the Statewide Wilderness EIS is scheduled to begin in the Fall of 1984. Public scoping meetings for the EIS are planned for September, at which time additional copies of this EA and the WARS will be available. We appreciate your continuing participation in the BLM's wilderness study process.

Sincerely yours,

L. Paul Applegate
District Manager

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**ALBUQUERQUE DISTRICT
WILDERNESS
FINAL ENVIRONMENTAL ASSESSMENT**

AUGUST 1984

**US Department of the Interior
Bureau of Land Management
Albuquerque District, New Mexico**

FINAL
ALBUQUERQUE DISTRICT
WILDERNESS ENVIRONMENTAL ASSESSMENT

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CHAPTER 1

PURPOSE AND NEED

INTRODUCTION

This document is the Final Environmental Assessment for eight Bureau of Land Management (BLM) Wilderness Study Areas in the Albuquerque District that are being studied as part of a statewide planning process. These areas encompass approximately 84,513 surface acres of public land administered by the BLM in two Resource Areas of the Albuquerque District. Preliminary recommendations for these areas were released for public comment in two documents: Albuquerque District Wilderness Draft Environmental Assessment (March 1983), and New Mexico Wilderness Supplemental Draft Environmental Assessment (August 1983).

NEED FOR THE PROPOSAL

The Federal Land Policy and Management Act of 1976 (FLPMA) mandated the BLM to examine the wilderness potential of certain areas of public land. The wilderness review provision of FLPMA, Section 603, directs the BLM to conduct an inventory to identify all roadless areas of 5,000 acres or more that have wilderness characteristics. These areas are called Wilderness Study Areas (WSAs). WSAs have been identified by the BLM and studied to determine whether each is suitable for preservation as wilderness or is more suitable for other uses. The findings of these studies will lead to recommendations, through the Secretary of the Interior and the President, to Congress. Only Congress has the authority to designate public land as wilderness.

THE BLM NEW MEXICO WILDERNESS STUDY PROCESS

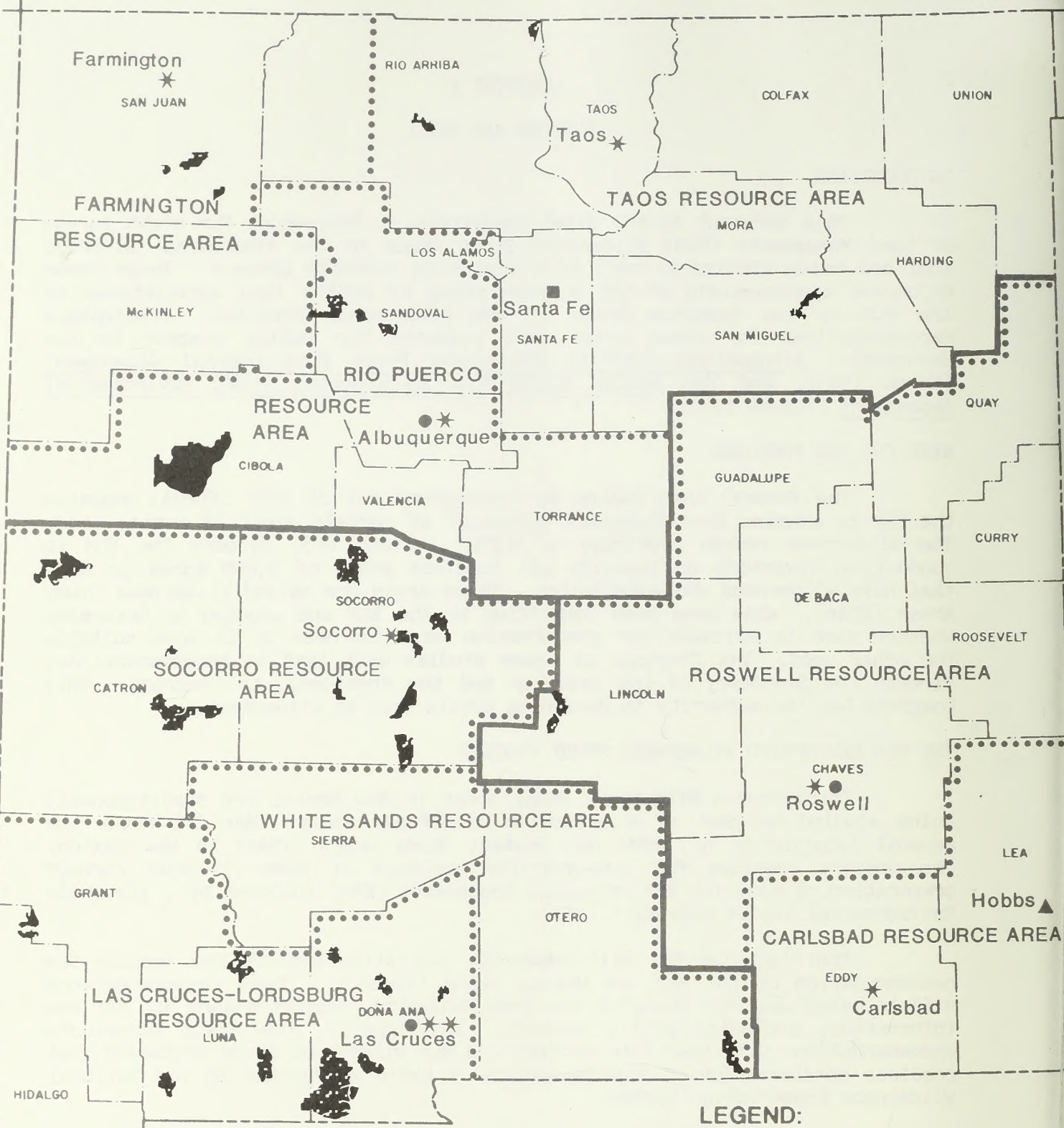
Thirty-seven Wilderness Study Areas in New Mexico are simultaneously being studied as part of a statewide wilderness study. Map 1-1 shows the general location of all WSAs and Instant Study Areas (ISAs) in New Mexico. The process provides for site-specific analysis of these 37 WSAs through preparation of district Environmental Assessment (EAs) followed by a statewide Environmental Impact Statement (EIS).

The Statewide EIS will summarize cumulative impacts and include the recommendation of the BLM New Mexico State Director. These recommendations will be based upon the District and Area Managers' recommendations and any new information, including public comment. Additionally, the State Director's recommendations will take into account one BLM wilderness study criterion that requires consideration of representation of basic ecosystems in the National Wilderness Preservation System.

After public comment and subsequent revisions, a Final EIS and Wilderness Study Reports will be prepared. Recommendations will be made through the Secretary of the Interior to the President, followed by a Congressional decision on wilderness designation.

Until Congress makes its decision on wilderness designation, the WSAs will be managed under the Final Interim Management Guidelines for Lands Under Wilderness Review (USDI, BLM 1983). If Congress designates any as wilderness, management would be under the Wilderness Management Policy (USDI, BLM 1981).

Bureau of Land Management
**NEW MEXICO
WILDERNESS
STUDY AREAS 1984**



LEGEND:

- BLM Wilderness Study Areas
- District Boundaries
- Resource Area Boundaries
- State Office
- District Office
- Resource Area Office
- Satellite Office

In the meantime, the Rio Puerco and Taos Resource Areas are conducting comprehensive land use planning efforts. These efforts are called Resource Management Plans (RMPs). Both plans are expected to be approved by 1986, before Congressional action is expected on wilderness designation.

The WSAs in each Resource Area are being studied in the RMPs for various kinds of non-wilderness management, because consideration for actual wilderness designation is being conducted separately in this wilderness study process. An RMP decision on any WSA may be incorporated into the Wilderness Study Report later in this process. The report would constitute an updated recommendation to Congress on how the BLM would manage a WSA if it was not designated as wilderness.

The tentative RMP proposals for some WSAs currently emphasize special management for particular values. The Wilderness Analysis Reports (published as a separate document from this EA) discuss this in further detail. Congress, however, will have the final decision, because it may instruct the BLM to manage a WSA in a particular way in the event of non-designation.

WILDERNESS STUDY AREAS IN THE ALBUQUERQUE DISTRICT

As the result of the wilderness inventory process and subsequent policy decisions, 11 WSAs exist in the Albuquerque District (refer to Map 1-2). These WSAs are located within the Rio Puerco, Taos, and Farmington Resource Areas of the Albuquerque District.

Three WSAs (Bisti, De-na-zin, and Ah-shi-sle-pah) located in the Farmington Resource Area are being studied in a separate Environmental Impact Statement. The remaining eight WSAs are being studied in the statewide study process of which this EA is a part. These eight WSAs, their corresponding inventory numbers, and their acreages are listed in Table 1-1 by Resource Area.

On December 30, 1982, the Secretary of the Interior published in the Federal Register (Vol. 47, No. 251) a notice amending previous wilderness inventory decisions in accordance with three Interior Board of Land Appeals (IBLA) decisions. These decisions involved areas smaller than 5,000 acres; lands where the federal government owns the surface but where the subsurface mineral estate is nonfederally owned (referred to as split-estate lands); and areas contiguous to designated wilderness areas.

In New Mexico, this policy announcement resulted in the elimination of 12 WSAs from the statewide study. In the Albuquerque District, the Manzano WSA was eliminated because it was smaller than 5,000 acres. The Chamisa WSA was eliminated because it was smaller than 5,000 acres after deletion of split-estate lands.

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TABLE 1-1

STATEWIDE WILDERNESS STUDY PROCESS--
WILDERNESS STUDY AREAS IN THE BLM ALBUQUERQUE DISTRICT

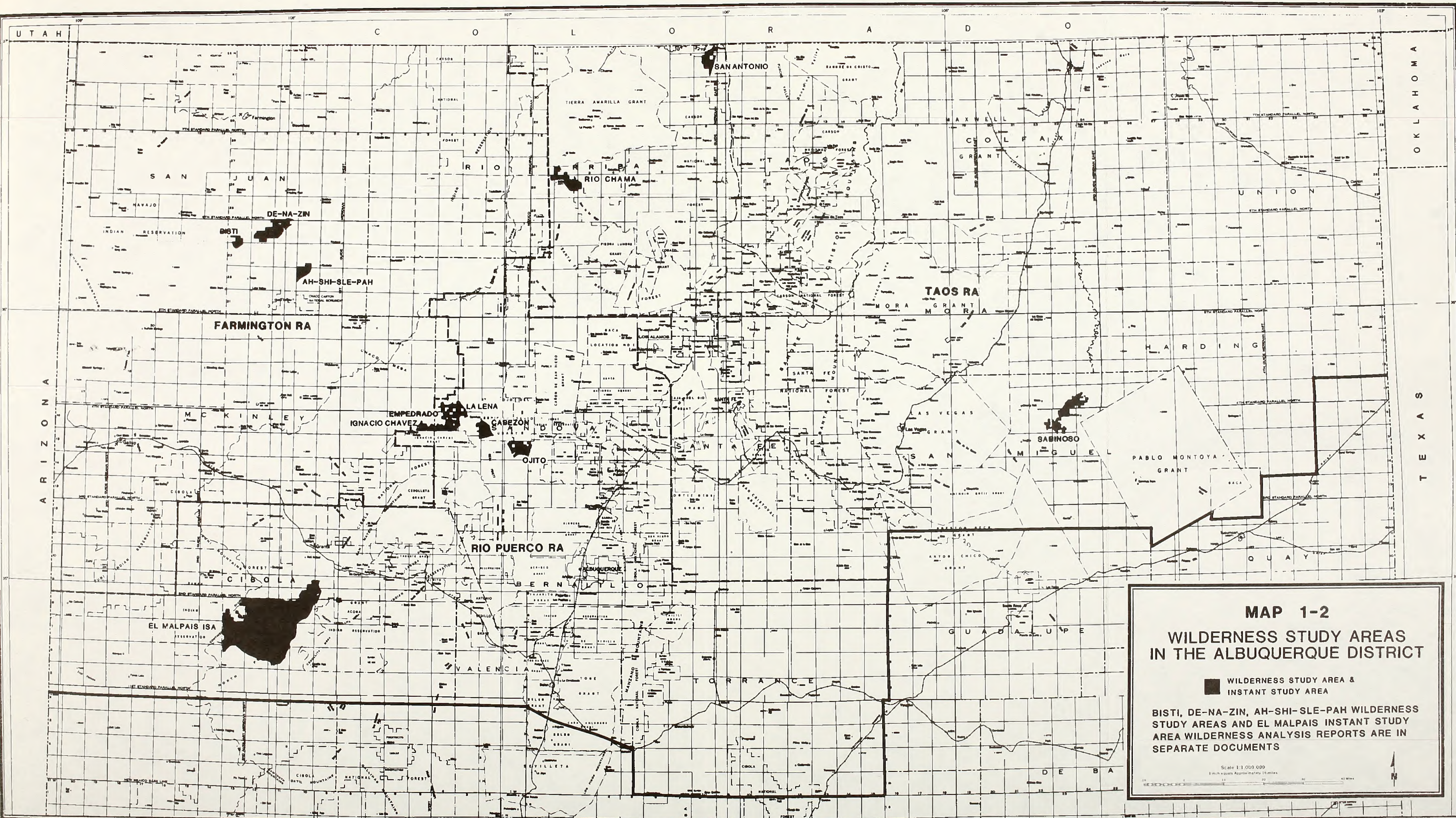
Resource Area and WSA Name	WSA Number	Acres ^{a/}
<u>Rio Puerco Resource Area</u>		
Cabazon	NM-010-022	8,118
Empedrado	NM-010-063	9,410
Ignacio Chavez	NM-010-020	9,961
La Lena	NM-010-063A	10,310
Ojito	NM-010-024	11,919
<u>Taos Resource Area</u>		
Rio Chama	NM-010-059	11,985
Sabinoso	NM-010-055	15,760
San Antonio	NM-010-035	7,050

Source: BLM Albuquerque District Office Files.


Notes: ^{a/} Acreages are approximate and reflect corrections made during the wilderness study; therefore, they may differ from the acreages published in the New Mexico Wilderness Study Area Decisions, November 1980.

This policy announcement also resulted in boundary changes for 11 other WSAs in New Mexico. These WSAs were modified but still remain in the statewide study. In the Albuquerque District a major boundary adjustment, reinventory, and restudy was found to be necessary for the Ignacio Chavez WSA because it contained a substantial amount of split-estate lands.

The New Mexico BLM has modified its administrative boundaries since the District Draft EA was released. The modification resulted in moving the jurisdiction of the El Malpais Instant Study Area (ISA) to the Albuquerque District, Rio Puerco Resource Area. (Refer to Map 1-2 for the location of El Malpais ISA within the Rio Puerco Resource Area.) The El Malpais ISA is being studied in a separate Environmental Impact Statement.



MAP 1-2
WILDERNESS STUDY AREAS
IN THE ALBUQUERQUE DISTRICT

 WILDERNESS STUDY AREA &
INSTANT STUDY AREA

BISTI, DE-NA-ZIN, AH-SHI-SLE-PAH WILDERNESS
STUDY AREAS AND EL MALPAIS INSTANT STUDY
AREA WILDERNESS ANALYSIS REPORTS ARE IN
SEPARATE DOCUMENTS

Scale 1:1,000,000
1 inch equals approximately 16 miles

CHAPTER 2

ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

INTRODUCTION

This Final EA discusses eight WSAs and includes the analysis of potential impacts of the various alternatives considered for each WSA. Four alternatives were established as possible ways of managing these WSAs in the Draft EAs. The impacts of each alternative were then analyzed in this for each WSA as appropriate. These management alternatives and the District Manager's Preferred Alternative are defined below and shown in Table 2-1. A more detailed analysis of the environmental impacts of the proposed alternatives can be found in the Wilderness Analysis Reports (Appendices A through H of this EA, published as a separate document).

ALL WILDERNESS ALTERNATIVE

This alternative considers recommending an entire WSA as suitable for wilderness.

AMENDED BOUNDARY ALTERNATIVE

This alternative considers recommending a portion of a WSA as suitable for wilderness designation when warranted by resource conflicts, manageability considerations, and other relevant factors.

NO WILDERNESS/AMEND THE EXISTING PLAN ALTERNATIVE

This alternative consists of recommending a WSA as nonsuitable for wilderness designation. It also recognizes that the existing land use plan or management strategy does not adequately reflect current needs. Amending the existing plan or management strategy when no plan exists could result in a special designation or improved management to reflect current needs.

NO ACTION (NO WILDERNESS/MANAGE UNDER EXISTING PLAN) ALTERNATIVE

This alternative consists of no wilderness designation, resulting in management in accordance with the existing land use plan or management strategy.

PREFERRED ALTERNATIVE

The Preferred Alternative for each WSA is indicated in Table 2-1. This alternative represents the recommendation of the District Manager in this Final Environmental Assessment.

CHANGES IN ALTERNATIVES SINCE THE DRAFT EAs

In the Draft Environmental Assessment and Wilderness Analysis Reports for the Empedrado and La Lena WSAs, an alternative to amend the existing land use plan (the No Wilderness Alternative) was analyzed. Since the Draft's publication in March 1983, a comprehensive land use planning effort has been

initiated in the Rio Puerco Resource Area where these two WSAs are located. This effort is called a Resource Management Plan (RMP). The Empedrado and La Lena WSAs are now being considered in the tentative alternatives of the RMP as Special Designation Areas. As a result of this current land use planning effort, the scope of the No Action Alternative for both these WSAs has been changed to include the previously separate No Wilderness Alternative.

If the WSAs are not designated a wilderness, they will be managed under the No Action Alternative (the Preferred Alternative), which would involve management under other than wilderness policy. Management would follow the guidelines of the Rio Puerco RMP. The RMP is expected to be approved in late 1985 while the wilderness study process is still underway. Therefore the RMP decisions concerning these two WSAs may be incorporated into the Wilderness Study Report to be written later in the process.

In the Draft Environmental Assessment and Wilderness Analysis Report for the Sabinoso WSA, the Preferred Alternative was the All Wilderness Alternative. As a result of public input and re-evaluation of the wilderness criteria and existing resources, this Preferred Alternative has been changed to the No Action Alternative (No Wilderness/Manage Under the Existing Plan). A more detailed analysis can be found in the Sabinoso WSA Wilderness Analysis Report.

TABLE 2-1

SUMMARY OF ALTERNATIVES

WSA/Acres	Preferred Alternative/	All Wilderness	Amended Boundary (Partial Wilderness)	No Wilderness (Amend the Existing Plan)	No Action (No Wilderness/ Manage Under Existing Plan)
<u>Rio Puerco Resource Area</u>					
Cabezon NM-010-022 8,118 acres	Recommend 6,555 acres of public land suitable for wilderness designation. Recommend the remaining 1,563 acres nonsuitable for wilderness designation.	Recommend 8,118 acres of public land suitable for wilderness designation.	See Preferred Alterna- tive column for summary.	For this WSA, this alternative was not assessed.	Recommend 8,118 acres of public land as nonsuit- able for wilderness designation and to be managed as undesignated multiple use lands.
Empedrado NM-010-063 9,410 acres	Recommend the entire 9,410 acres of public land as nonsuitable for wilderness designation.	Recommend 9,410 acres of public land as suitable for wilderness designa- tion.	For this WSA, this alternative was not assessed.	This Alternative has been dropped from consideration for this WSA in this Final EA.	See Preferred Alternative column for summary.
Ignacio Chavez NM-010-020 9,961 acres	Recommend 8,780 acres of public land suitable for wilderness designation. Recommend 1,181 acres nonsuitable for wilderness designa- tion.	Recommend 9,961 acres of public land suitable for wilderness designation.	See Preferred Alternative column for summary.	For this WSA, this alternative was not assessed.	Recommend 9,961 acres nonsuitable for wilderness designation.
La Lena NM-010-063A 10,310 acres	Recommend the entire 10,310 acres of public land as nonsuitable for wilderness designation and to be managed as undesignated multiple use lands.	Recommend 10,310 acres of public land as suit- able for wilderness designation.	For this WSA, this alternative was not assessed.	This Alternative has been dropped from consideration for this WSA in this Final EA.	See Preferred Alternative column for summary.
Ojito NM-010-024 11,919 acres	Recommend 11,297 acres of public land suitable for wilderness designa- tion. Recommend the remaining 622 acres of public land nonsuitable for wilderness designa- tion.	Recommend 11,919 acres of public land suitable for wilderness designation.	See Preferred Alternative column for summary.	For this WSA, this alternative was not assessed.	Recommend 11,919 acres of public land nonsuit- able for wilderness designation and to be managed as undesignated multiple use lands.

TABLE 2-1 (Concluded)

WSA/Acres	Preferred Alternative ^{a/}	All Wilderness	Amended Boundary (Partial Wilderness)	No Wilderness (Amend the Existing Plan)	No Action (No Wilderness/ Manage Under Existing Plan)
<u>Taos Resource Area</u>					
Rio Chama (formerly Navajo Peak) NM-010-059 11,985 acres	Recommend 4,032 acres of public land as suitable for wilderness designa- tion. Manage the re- maining 7,953 acres for the uses and activities indicated in the pertinent BLM planning documents for the area.	Recommend 11,985 acres of public land suitable for wilderness designation.	See Preferred Alternative column for summary.	Recommend 4,032 acres of public land be managed under special designa- tion to protect the natural values of the Chama River Canyon. The remaining public land acreage to be managed as undesignated multiple use lands.	Recommend 11,985 acres of public land as unsuitable for wilderness designation.
Sabinoso NM-010-055 15,760 acres	Recommend 15,760 acres of public land nonsuit- able for wilderness designation.	Recommend 15,760 acres of public land suitable for wilderness designation.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	See Preferred Alternative column for summary.
San Antonio NM-010-035 7,050 acres	Recommend 7,050 acres of public land as nonsuit- able for wilderness designation.	Recommend 7,050 acres of public land as suitable for wilderness designation.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	See Preferred Alternative column for summary.

^{a/} Recommendation of the District Manager.

CHAPTER 3

AFFECTED ENVIRONMENT

OVERVIEW OF THE ALBUQUERQUE DISTRICT

The BLM Albuquerque District includes approximately 2.7 million acres of scattered public land in the northern half of New Mexico. The two Resource Areas in which the eight WSAs involved in the statewide study are located account for 1,460,377 surface acres of the public lands in the district. The programs carried out in these Resource Areas include range and forest management, mineral leasing, recreation, cultural resources, lands, paleontology, soils, visual, watershed and wildlife habitat management.

EXISTING RESOURCES, EXISTING AND POTENTIAL USES

Tables 3-1 and 3-2 summarize the affected environment, and Tables 3-3 and 3-4 summarize the existing and potential uses of each of the WSAs by Resource Area.

SOCIAL AND ECONOMIC CONDITIONS

Introduction

This analysis focuses on four counties: McKinley, Rio Arriba, Sandoval, and San Miguel. The eight WSAs being covered in the statewide study are located in these counties. The common factor all these counties have is that Albuquerque (located in Bernalillo County) serves as their primary trade and service center. The adjoining counties of McKinley, Rio Arriba, and Sandoval contain seven of the WSAs. Each of these counties is served by one or more secondary trade and service centers. San Miguel County, containing one WSA, also has a trade and service center but because of the distance from the other counties, it does not form a cohesive social or economic unit with them.

Population

Population characteristics vary by county, but the affected WSA counties all show growth over the decade 1970 to 1980. All of them had annual growth rates of less than 5 percent, except Sandoval County, where the rate was nearly 10 percent.

The Standard Metropolitan Statistical Areas (SMSAs--refer to the Glossary) within an 8-hour drive (400 miles) of the WSAs had a combined 1980 population of 3.5 million people.

Population densities by square mile for the WSA counties are: McKinley--10.4 (56,536 persons in 5,461 square miles); Rio Arriba--5.0 (29,282 persons in 5,883 square miles); Sandoval--9.4 (34,799 persons in 3,717 square miles); and San Miguel--4.8 (22,751 persons in 4,767 square miles).

Local Attitudes and Perceptions

Approximately 60 percent of the 1980 population in these four counties is classified as rural. Most of these people exhibit attitudes and

values typical of rural western United States groups; they value the lifestyle offered by the local communities. Much of the support for wilderness and its values comes from outside the WSA counties by people who are less directly affected.

Economic Characteristics

Wage and salary income figures by major source for 1980 show government (28 percent), retail trade (11 percent), services (17 percent), and construction (6 percent) in the affected counties.

Income

Per-capita income for each of the four counties was below the state average in 1980. When ranked with all the state's 32 counties, the four counties ranked as: McKinley--24th, Rio Arriba--27th, Sandoval--31st, and San Miguel--30th in per-capita income.

Employment

The total employment for the four WSA counties was 47,136 persons in 1980. The major employment sectors were government, retail trade, and services. Government employment accounted for 11,265 jobs, or approximately 21 percent of the 1980 four-county civilian labor force. Government employment by county was McKinley--4,816; Rio Arriba--2,348; Sandoval--1,085; and San Miguel--3,016.

Some local residents also maintain livestock grazing operations. Though some of these operations are sizable, those that may be affected by wilderness designation in the Taos and Rio Puerco Resource Area are small. These operations are not the main source of income for the operators, who are usually employed in other sectors.

The 1980 unemployment rate for each of the four counties was higher than the state's rate of 7.4 percent. Rio Arriba had the highest unemployment rate of 17.7 percent. Figures for the other counties were San Miguel--10.6 percent, McKinley--8.2 percent, and Sandoval--7.7 percent.

By September of 1982, general economic conditions had resulted in considerable change in the unemployment rates. The state's rate had become 9.9 percent. Figures for the counties were: Rio Arriba--18.4 percent, McKinley--14.7 percent, San Miguel--12.0 percent, and Sandoval--8.4 percent (this last figure is actually the Albuquerque SMSA rate; Sandoval County is part of the SMSA).

TABLE 3-1
SUMMARY OF AFFECTED ENVIRONMENT, RIO PUERCO RESOURCE AREA WSAs

WSA	Acreage	Land Status	Topography	Geology	Water and Soils	Vegetation	Wildlife	Threatened or Endangered Species	Visual	Cultural	Wilderness Values	Other
Cabezon Entire WSA	8,118	All public land.	Three principal land forms: (1) eroded volcanic neck of Cabezon; (2) talus covered slopes (3) incised mesa topography. Cabezon Peak is the most spectacular example of volcanic necks in the region, rising to an elevation of 7,785 feet.	Cabezon Peak is the highest and most impressive volcanic neck in the region. The basalt core is about 1,500 feet in diameter. Is considered an outstanding volcanic neck in the Four Corners Region. Excellent opportunity to study "internal plumbing" of a volcano.	Surface water include 5 small reservoirs. No ground water developments occur. Quality ranges from fresh to moderately saline. Dominant use is by beef cattle and wildlife. Critical levels of soil loss in the southern 1/3 of the unit.	Grana-Galleta Steppe, 30% of WSA. Juniper-Pinyon Woodland, 70% of WSA.	90 vertebrate species including: mule deer, antelope (low populations), coyote, bobcat, gray fox, badgers, common small mammals; red-tail hawks; good variety of small birds; abundant scaled quail and morning dove; 6 species of waterfowl; several reptiles including diamond-backed rattlesnake.	Maxillaria Wrightii -pincushion cactus; Pediocactus papyracanthus -blue grama cactus.	Scenic quality rating of A. Cabezon Peak is an important historic and contemporary landmark.	One National Register site on Cabezon Peak; currently functions as shrine for Native Americans. Cabezon Peak served as part of prehistoric Chacoan signaling system. Numerous prehistoric and historic sites.	High degree of perceived naturalness. Unique topography provides opportunity for solitude or primitive recreation. Special Features: refer to T&E Cultural, Visual, Wildlife and Geology.	Paleontology: sedimentary rocks contain large fossil assemblage-little is known of their extent. Air Quality-readings from monitoring data indicate within Class II standards.
Portion Recommended Suitable	6,555	All public land.	Same as above.	Same as above.	Water, same as above excluding reservoirs. Soils, most critical portion suffering from soil loss removed.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.
Portion Recommended Nonsuitable	1,563	All public land.	Incised mesa topography.	Mesa, cut by arroyos.	Water, same as above excluding reservoirs. Soils, area of most critical soil loss.	Grana-Galleta Steppe-100%.	Same as above.	None presently known.	Low Scenic Value.	Few sites presently known.	Limited opportunities for primitive recreation; marginal solitude opportunity.	Same as above.
Empedrado Entire WSA	9,410	9,410 acres of public lands. 360 acres private land inholdings.	Overall geomorphology consists of sandstone hills cut by arroyos. Elevation ranges from 6,000 feet to 6,552 feet.	Is situated on the southwest margin of the San Juan Basin near the boundary between the Chaco slope and the Central Basin. Consists of gently dipping sandstone beds of the Menefee Formation which forms cuesta and valley landscape.	Water, average annual water yields fall between 0.1" and 0.5". Since 1979, a mine dewatering process has been discharging into Arroyo Chico at a rate of about 5 to 6 cubic feet/second, creating a perennial stream. Contains 2 known springs and 3 water wells. Soils, susceptible to erosion; contains heavy textural soils with sodium and alkali content.	Contains riparian habitat in the Arroyo Chico. Grana-Galleta Steppe-14% of WSA. Juniper-Pinyon Woodland-76% of WSA.	268 vertebrate species, including; 10 amphibians, 132 birds, 87 mammals, 39 reptiles. This includes mule deer, gray fox, golden eagles, hawks, great horned owl, coyote, badgers, prairie dogs, scaled quail.	None known.	Northern portion rated scenic Class C. Southern portion rated scenic Class A.	Limited survey identified 24 sites, including Archaic, Navajo and historic.	High degree of perceived naturalness. Opportunities for solitude concentrated in the southern portion. Limited opportunity for primitive recreation.	Paleontology-Sedimentary rocks that crop out in the WSA known regionally to contain a varied fossil assemblage. Little is known of their extent.
Portion Recommended Suitable	0	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.
Portion Recommended Nonsuitable	9,410	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.
Ignacio Chavez Entire WSA	9,961	All public land.	In the northern portion, mesas, cuevas, rock terraces, retreating escarpments, canyons, arroyos, and in the southern portion, basalt plains, cinder cones, exhumed plugs, dikes, and extensive talus slopes. Elevation ranges from 6,000 feet to 7,731 feet.	WSA is situated on the southwest margin of the San Juan Basin between the Chaco slope and Central basin. Sub-horizontal volcanic and sedimentary rocks crop out in many small cliffs and spectacular escarpments.	Water, average annual yield between 0.1 inch and 0.5 inch. Peak runoff occurs from July to September. Soils on mesa top -- low erosion potential; on steep mesa side-slopes susceptible to accelerated erosion; on foothills -- highly susceptible; on bottomland -- highly susceptible.	2,982 acres grana-galleta, 7,367 acres juniper-pinyon woodland, 12 acres pine-Douglas fir forest.	Provides one of the most diverse and productive wildlife habitat areas on public land in northwest New Mexico: 146 bird species; 71 mammals; 31 reptiles, 9 amphibians. This includes mule deer, elk, Merrian's turkey, black bear, tassel-cared squirrel, morning dove, coyote, badger, porcupine, cottontail, Garrison's prairie dog, golden eagle, and several hawk and jay species.	No known species.	Class II.	Limited inventory suggests little probability of sites with architectural features. Two sites are currently recorded within the boundaries of this WSA.	High degree of perceived naturalness. Diversity in topography and vegetation assure opportunity for solitude and primitive recreation. Special Feature: refer to wildlife, visual, and cultural.	

TABLE 3-1 (Continued)

WSA	Acreage	Land Status	Topography	Geology	Water and Soils	Vegetation	Wildlife	Threatened or Endangered Species	Visual	Cultural	Wilderness Values	Other
<u>Ignacio Chavez (Cont'd)</u>												
Portion Recommended Suitable	8,780	All public land.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	1,425 acres grama-galleta, 7,343 acres juniper-pinyon woodland.	Same as entire WSA.	Same as entire WSA.	Same as Entire WSA.	Same as entire WSA.	Same as entire WSA.	
Portion Recommended Unsuitable	1,181	All public land.	Northern portion: same as entire WSA.	Same as entire WSA.	Water: Same as entire WSA. Soils, foothills -- highly susceptible to erosion.	1,157 acres grama-galleta, 24 acres juniper-pinyon woodland.	Same as entire WSA excluding black bears, elk, and prairie dogs.	Same as entire WSA.	Class II. Consists primarily of a lower visual value.	No known sites.	Naturalness impacted by two large retention dams. Marginal opportunity to experience solitude or primitive and unconfined recreation.	
<u>La Lena</u>												
Entire WSA	10,310	10,310 of public land. 640 acres of state inholdings.	Overall geomorphology consists of sandstone mesas cut by arroyos. Elevations range from 6,100 feet to 6,500 feet.	Is situated on the southwest margin of the the San Juan Basin near the boundary between the Chaco Slope and the Central Basin. Sub-horizontal volcanic and sedimentary rocks crop out in many small cliffs and spectacular escarpments.	Water, peak runoffs occur during the summer and early autumn months. Contains one known undeveloped spring.	Grama-Galleta-34% of WSA. Juniper-Pinyon Woodland-58% of WSA. Great Basin Sagebrush -8% of WSA.	Contains San Luis Mesa; ideal raptor nesting habitat. Observed: golden eagle, great horned owl, a few mule deer, coyote, gray fox, black-tailed jack-rabbit, Garrison's prairie dog, scaled quail.	Potential habitat for <u>Abronia bigelovii</u> -Bigelov verbenae; <u>Pediocactus papyracanthus</u> -blue grama cactus; <u>Astragalus kentrophyta</u> var. <u>neomexicana</u> -N.M. <u>kentrophyta</u> .	Southern half-VRM Class III. Northern half-VRM Class IV.	Limited survey-reveals five known sites; 3 Navajo and 2 lithic scatters of undeterminable cultural affiliation. A minimum of 150 sites is projected.	High degree of perceived naturalness. Limited opportunity to experience solitude or primitive recreation. Special Features: refer to wildlife and cultural.	Paleontology, sedimentary rocks that crop out in WSA known regionally to contain a varied fossil assemblage. Little is known of their extent.
Portion Recommended Suitable	0	Entire WSA recommended nonsuitable	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entired WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.	Entire WSA recommended nonsuitable.
Portion Recommended Nonsuitable	10,310	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.
<u>Ojito</u>												
Entire WSA	11,919	11,919 acres of public land. 640 acres of state land inholdings. 160 acres of private land inholdings.	Located in the Navajo section of the Colorado Plateau province. Land forms include mesas, cuestas, rock terraces, retreating escarpments, canyons, arroyos, badlands. Elevation varies from 5,650 feet to 6,211 feet.	Is situated on the southeast margin of San Juan Basin. Subhorizontal volcanic and sedimentary rocks crop out in many small cliffs and several spectacular escarpments.	Water, peak runoff occurs from July through September (99% of annual discharge). Average annual water yields fall between 0.1" and 0.5". Contains one known undeveloped water well and several springs. Soils, moderately to strongly alkaline and highly susceptible to erosion.	Grama-Galleta Steppe-48% of WSA. Juniper-Pinyon Woodland-52% of WSA.	268 vertebrate species including amphibians, birds, mammals, reptiles. These include antelope, mule deer, coyote, fox, kestrel, as well as excellent nesting habitat for raptors and nesting areas for migrating waterfowl.	High potential for rare plant occurrence: <u>Abronia bigelovii</u> -Bigelov verbenae; <u>Selinocarpus lanceolatus</u> -Moopod; <u>Erigeron pulcherrimus</u> var. <u>pulcherrimus</u> -fleabane; <u>Pediocactus papyracanthus</u> -blue grama cactus; <u>Muhlenbergia purgens</u> -sandhill muhly.	High visual values.	Surveys suggest over 500 sites are located in WSA with a density of over 21 site per section. Reported sites include 12 Archaic, 11 prehistoric pueblo Navajo, 7 historic.	High degree of perceived naturalness. Numerous side canyons, sandy arroyos and rough rocky terrain provide outstanding opportunity to experience solitude and primitive recreation. Special Features: refer to T&E visual and cultural.	Paleontology, four sedimentary rock units exposed are regionally fossiliferous. One site consisting of dinosaur vertebrae and ribs known. Significance not yet determined.
Portion Recommended Suitable	11,297	11,297 acres of public land. 640 acres of state land inholdings.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.
Portion Recommended Nonsuitable	622	622 acres of public land.	Rolling topography cut by Querencia Arroyo.	Same as above.	Same as above	Grama-Galleta-100%.	Same as above, excluding raptor habitat, waterfowl and antelope.	Same as above.	Marginal visual values.	No known sites.	Marginal Wilderness Values.	No known Paleontology sites.

Source: BLM Albuquerque District Wilderness Analysis Reports, 1984.

TABLE 3-2

SUMMARY OF AFFECTED ENVIRONMENT, TAOS RESOURCE AREA WSAs

WSA	Acreage	Land Status	Topography	Geology	Water and Soils	Vegetation	Wildlife	Threatened or Endangered Species	Visual	Cultural	Wilderness Values
Rio Chama (formerly Navajo Peak) Entire WSA	11,985	11,985 acres of public land. 320 acres of private inholdings.	The WSA contains rolling plains bisected by the Rio Chama Canyon gorge with elevations ranging from 6,600 to 7,500 feet.	Located in the Gallina Fault. Erosion by the Rio Chama has created a 900 foot canyon exposing the colorful Morrison Formation (Jurassic) in the canyon walls.	The WSA lies within the Rio Chama drainage. Flow of the Rio Chama through the WSA has seasonal variations. Soil types in the study area are grouped into two associations: Las Lucas-Little-Persayo and Rock Land-Rough Broken Land.	4,700 acres of midland grasslands, 5,000 acres of mid-land shrubs, 1,000 acres of P.J. woodlands, 800 acres of conifer forests and 485 acres of riparian vegetation. Sagebrush clearing has been done between 1950 and 1970 on approximately 5,000 of these acres.	The area supports some mule deer, elk and mountain lion. Excellent fisheries habitat are found in the area for rainbow and German Brown trout. Ducks, geese and some raptor species can be found along the river.	Threatened and endangered animals confirmed to frequent the area are Bald eagle, peregrine falcon and osprey. No threatened or endangered plants are presently recognized as being indigenous to this locality or known to occur within the study area.	Two VRM classes have been identified in the study area. The rolling uplands beyond the rim of the canyon are Class III. The Chama River Canyon is rated a higher Class II. The entire WSA is being managed during the interim as VRM Class II.	The WSA is expected to contain remains of PaleoIndian, Archaic, Prehistoric Pueblo, and Historic Homesteading sites.	Naturalness, solitude and primitive recreation opportunities are all experienced below the canyon rims within the Rio Chama gorge. The chances for solitude and primitive recreation are somewhat diminished above the rim due to the influence of human uses.
Portion Recommended Suitable	5,232	5,232 acres of public land. No private inholdings.	The portion recommended suitable consists of the Rio Chama Canyon gorge which is approximately 900 feet deep with steep rocky sides, and the river bottom.	This portion is overlain by the same formations as the entire WSA. One of those formations, the Morrison, is visible within the canyon walls.	The Rock Land-Rough Broken land association is along the Chama River and below the rim. It is characterized by rough and broken topography, very steep slopes and rock outcrops.	The most obvious plant species associated with the canyon are cottonwoods, willows, ponderosa pine and various deciduous shrubs.	Same as entire WSA.	Same as entire WSA.	The visual environment below the rim and along the Chama River offer a greater degree of landform and vegetative features than those areas above the rim. It has been rated VRM Class II.	Same as entire WSA.	The perceived naturalness, the feeling of solitude and the opportunities for primitive recreation are more apparent.
Portion Recommended Nonsuitable	6,753	6,753 acres of public land. 320 acres of private inholdings.	Topography consists primarily of gently to strongly sloping and rolling uplands.	This portion consists of the same geologic structure as the entire WSA, however it does not contain the canyon with the exposed Morrison Formation.	Consists primarily of the Las Lucas-Little-Persayo association. Slopes are predominantly less than 20 percent. They support fair to good stands of vegetation	This portion contains primarily pinyon-juniper woodlands, and Great Basin, sagebrush. Along the canyon rim ponderosa pine predominates. The area where sagebrush clearing has taken place lies in this portion.	This portion above the rim supports mule deer, elk, black bear, coyote and turkey.	Same as entire WSA.	The visual quality above the canyon is of lower quality due to the lack of variety in landform relief and vegetation. It has been rated a VRM Class III.	Same as entire WSA.	Naturalness and the opportunities for solitude are marginal due to the influences of man in this portion.
Sabinoso Entire WSA	15,760	15,760 acres of public land. 320 acres of private inholdings.	Topography in this portion consists of steep rugged canyons surrounded by rolling and flat mesa tops. Elevation ranges from 4,500 to 6,000 feet.	Located in the Canadian Escarpment with a mantle of flat-lying Mesozoic sediments up to 2,000 feet thick, underlain by 500 feet of upper Paleozoic sediments and rims capped by sandstone.	The WSA lies between the Canyon Largo and Lagartija Creek drainages which flow into the Canadian River. On the flatter mesa and ridge tops areas in the WSA is the Crews-Bernal-Travesilla soil association. Along the canyon walls and in the bottoms is the Rock Land-Rough Broken Land soil association.	6,700 acres of conifer forests and pinyon-juniper woodlands, 7,160 acres of midland grasses and 1,900 acres of barren land.	There are some mule deer and barbary sheep with sitings of imported ibex occurring in the unit. Habitat potential exists for big-game species.	No known occurrence of T&E plant species. Little potential for Black-footed ferret, because habitat conditions to support prairie dog populations are inadequate.	The WSA offers a variety in visual resources from its canyon lands with riparian habitat to open rolling prairie lands. It is presently being managed as VRM Class II during the interim.	It is expected that the area contains a high density of archaeological sites dating from the PaleoIndian period through homesteading and ranching during the early 20th century.	High degree of solitude may be experienced due to the extreme remoteness of the canyons. Opportunities for primitive recreation are outstanding.
Portion Recommended Suitable	0	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.
Portion Recommended Nonsuitable	15,760	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.

TABLE 3-2 (Concluded)

WSA	Acreage	Land Status	Topography	Geology	Water and Soils	Vegetation	Wildlife	Threatened or Endangered Species	Visual	Cultural	Wilderness Values	Other
San Antonio Entire WSA	7,050	7,050 acres of public land. 1,280 acres of state owned surface inholdings. No non-BLM subsurface.	Topography of the WSA consists of rolling flat plains bisected north and south by the 200 foot deep Rio San Antonio Canyon. Elevation ranges from 7,900 feet to 8,835 feet.	Located within the Tusas uplift and the Rio Grande trough, the WSA is comprised of tertiary, sedimentary and volcanic rock and alluvial deposits.	The WSA lies within the Rio San Antonio and Rio de Los Pinos drainages. The Rio San Antonio is an ephemeral water source. Three soil associations are found within the WSA. They are: 1) Travelers-Luhm-Stunner. 2) Raton-Rock Outcrop-Orejas and 3) Eutroboralfa-Haplobololls.	5,000 acres midland shrubs 2,000 acres midland grasslands and 1,000 acres of pinyon-juniper woodlands.	The WSA is utilized by pronghorn antelope herds. Some raptor species nest along the canyon walls of the Rio San Antonio.	No T&E plan species are presently recognized as being indigenous to this locality or known to occur in th study area. There is the potential for occurrence of 9 T&E animal species in the area. Sitings of the bald eagle, osprey and peregrine falcon have been reported.	The San Antonio WSA contains both VRM Class II and III. The entire WSA is being managed as VRM Class II under the interim due to the non-impairment standard. The overall feeling is one of open expanses contrasted by deep incisions in the flat plains produced by two river canyons.	No known sites other than historic sheep herding camps.	Opportunities for naturalness and solitude have been reduced by the evidence of human uses. Opportunities for primitive recreation exist but are not considered outstanding.	
Portion Recommended Suitable	0	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.	Entire WSA recommended as nonsuitable.
Portion Recommended Nonsuitable	7,050	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.

Source: BLM Albuquerque District Wilderness Analysis Reports, 1984.

TABLE 3-3

EXISTING AND POTENTIAL USES, RIO PUERCO RESOURCE AREA WSAs

WSA	Minerals	Watershed	Livestock Grazing	Forest Products	Recreation	Education/Research	Native American Uses	Realty Actions	Wildlife
<u>Cabezon</u> Entire WSA	Highest potential for development is associated with uranium contained in the Morrison Formation. There is a low to moderate potential for development of other minerals.	The WSA is in the Rio Puerco watershed which has severe soil erosion conditions. Water use is primarily by livestock. Erosion control devices are being considered to arrest the severe erosion.	The WSA encompasses portions of 5 allotments. Vegetation monitoring is ongoing.	No wood collection has been set up for the area. Pinyon nut collection occurs on a small scale. Some illegal woodcutting does occur.	Cabezon Peak is a popular climbing spot. Hunting and random ORV use occurs in the WSA but would be eliminated through designation.	Cabezon Peak provides interesting subject matter for geologic study. Prehistoric and historic shrines in the WSA provide a good basis for research and education.	Native Americans have indicated that many places of religious significance exist in and near Cabezon Peak.	A powerline right-of-way constitutes part of the WSA's eastern boundary. The area east of Cabezon has been proposed for other utility rights-of-way.	Mule deer and antelope inhabit the area in small numbers. The Peak is attractive to birds of prey and swallows for perching and nesting. The WSA is within the Ojo del Espirito Santo Grant and the Upper Rio Puerco Habitat Management Plan (HMP). This HMP proposes projects to eliminate limiting factors by constructing waters, perch sites, exclosure fences, and by maintaining stock ponds.
Portion Recommended Suitable	Same as entire WSA.	Would exclude the portion where a serious need exists for watershed restoration.	This area would only encompass portions of three allotments.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Retracting a portion of the eastern boundary would allow "breathing room" for additional rights-of-way.	Same as entire WSA.
Portion Recommended Nonsuitable	Same as entire WSA.	Implementation of erosion control projects would be allowed without wilderness protection stipulations.	This area encompasses portions of three allotments.	Same as entire WSA.	Recreation activities relying on vehicular travel could continue.	Cabezon Peak is excluded from this portion.	Same as entire WSA.	Would be available for future rights-of-way actions.	Mule deer and antelope inhabit this area of more gentle terrain.
<u>Empedrado</u> Entire WSA	No exploration or development activity associated with locatable, leasable, or saleable minerals is occurring within the boundaries. A total of 331 mining claims have been staked within the WSA as well as 22 oil and gas leases. Potential for development of a moderate-sized coal mine in the northern half would depend on a successful exploration program.	Contains Arroyo Chico, which is part of the Rio Puerco watershed. The average rate of erosion for the WSA is moderate. Currently no watershed treatment projects are proposed.	This WSA encompasses portions of five grazing allotments. The WSA supports 1,340 AUMs. Implementation of an AMP is proposed for one allotment.	There is no commercial value in the forest products and little fuelwood value due to low stand density.	No visitor data is available for this area. The primary recreation use is believed to be big game hunting, camping, ORV use, hiking and sightseeing.	Education and interpretive potential exists for the observation and study of natural systems.	Native Americans have used the area for firewood gathering and hunting. Native Americans have indicated that places of religious significance exist in or near the WSA. Location and pattern of use were not identified.	No rights-of-way, withdrawals, easements or permits are pending or anticipated.	The Wildlife Habitat Management Plan for the area proposes the construction of several exclosure fences with wildlife watering devices. This will help provide small plots with water, cover, and forage for small animals.
Portion Recommended Suitable	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.	The entire WSA has been recommended as nonsuitable.
Portion Recommended Nonsuitable	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.
<u>Ignacio Chavez</u> Entire WSA	Only minor exploration and development has occurred on the WSA. The use permits for these activities are associated with approximately 269 mining claims and 10 oil and gas lease applications. The highest potential for development within the WSA is associated with coal and humates.	Groundwater use within the WSA consists of one developed spring and three undeveloped springs. No watershed treatment projects are currently proposed.	The WSA includes parts of three grazing allotments. The WSA presently supports approximately 985 AUMs.	The WSA does contain a small source of fuelwood with limited potential use. No current authorized use.	This WSA contain abundant opportunities for a variety of quality primitive recreation experiences. These recreation activities consist of backpacking, hiking, general camping, sightseeing, hunting, horseback riding, birdwatching, and photographic possibilities.	The variety of ecosystems located within the WSA provide an exceptional opportunity to utilize a "natural laboratory" where natural systems can be observed.	Native Americans have traditionally used the area for firewood gathering, hunting, and snake catching. Recent interviews indicate that many places in and near this WSA have religious significance to Native Americans.	No realty actions are planned.	The WSA is within the boundaries of the Upper Rio Puerco Habitat Management Plan, which calls for one small prescribed burn, or game bird exclosure and a spring development.

TABLE 3-3 (Continued)

WSA	Minerals	Watershed	Livestock Grazing	Forest Products	Recreation	Education/Research	Native American Uses	Realty Actions	Wildlife
Ignacio Chavez (Cont'd) Portion Recommended Suitable	Same as entire WSA.	Same as entire WSA.	Livestock grazing would remain similar to that described above with the exception of a reduction in AUMs because of fewer acres involved.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.
Portion Recommended Nonsuitable	Same as entire WSA.	No watershed treatment projects are pending or anticipated for this area.	The area is being utilized for livestock grazing and will continue to be used.	Little to no use of the area for forest products is expected.	The area can provide opportunities for those recreation activities described above in the entire WSA. The quality of the recreation experience would be lessened because of the marginal quality of the environment within the nonsuitable area.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Since this portion would be located within the area covered by the Upper Rio Puerco Habitat Management Plan, it could be implemented without wilderness restraints.
La Lena Entire WSA	No exploration or development activity associated with locatable, leasable or saleable minerals is occurring within the WSA. The highest potential for development is associated with coal and humates in the northern half of the WSA. All other commodities have only low to moderate potential for development.	Use of the WSA which is located in the Rio Puerco watershed has resulted in extensive sheet, rill and gully erosion. Studies being conducted in the area may result in future management efforts.	Five grazing allotments contain acreage within the boundaries of this WSA. The WSA supports approximately 1,410 AUMs. Implementation of Allotment Management Plans has been proposed for all five allotments. All the needed range improvements are either in place or being constructed.	There is no commercial value in the forest products and little fuelwood value due to low stand density of pinyon-juniper.	No visitor data is available for this area. The primary recreation use believed to be occurring in this area is hunting, camping, ORV, hiking, rock-hounding, horseback riding, photography and sightseeing.	Interpretive potential exists in the WSA in the form of a "natural laboratory" for the observation and study of natural systems.	Native Americans have traditionally used the area for firewood gathering and hunting. Certain Native Americans have conceded that places of religious significance exist in or near the WSA. Traditional uses will probably continue.	No rights-of-way, withdrawals, easements or permits are pending or anticipated in the near future in the WSA.	The WSA provides forage, covering and nesting areas for wildlife. One wildlife water device with a protective enclosure fence is present in the WSA. Adequate nesting habitat in the WSA exists to support greater numbers and kinds of raptors.
Portion Recommended Suitable	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.	The entire WSA has been recommended as nonsuitable for wilderness designation.
Portion Recommended Nonsuitable	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.
Ojito Entire WSA	No exploration or development activity associated with locatable, leasable or saleable minerals is occurring within the WSA. Fourteen oil and gas leases have been issued, no producing wells have been completed and the level of exploration activity has been low. All other known commodities in the WSA have only a low potential for development.	Past use has resulted in extensive sheet, rill and gully erosion WSA are in the WSA. No potential watershed treatment projects have been proposed.	Portions of four grazing allotments are located in this WSA. The area within this WSA supports approximately 1,207 AUMs.	Pinyon and juniper, the two major tree species growing in the WSA are not commercially usable because of their low stand density.	The WSA offers opportunities for sightseeing, horseback riding, photography, hiking and camping. ORV use and hunting does occur in the WSA. A motorcycle ORV race has used trails and arroyo bottoms, in the WSA. During 1981, 708 visitor days and 850 visits were reported for the area with most occurring on the day of the race.	The WSA presently serves one Albuquerque high school class as an on-site laboratory for its semester study of environmental issues.	Native Americans have used the area for firewood gathering and hunting. Some use continues presently. Traditional uses within the boundary of the WSA by Native Americans are expected to continue.	The western boundary of the WSA lies within a proposed 500 kV transmission line corridor.	Some existing stock tanks are scheduled for development for waterfowl use, which means cleaning and sealing of tanks, along with protective fencing of shoreline vegetation. One nest platform is proposed for construction.

TABLE 3-3 (Concluded)

WSA	Minerals	Watershed	Livestock Grazing	Forest Products	Recreation	Education/Research	Native American Uses	Realty Actions	Wildlife
Ojito (Cont'd) Portion Recommended Suitable	Same as entire WSA.	No active or potential watershed treatment projects have been proposed.	The portion recommended as suitable would provide a situation similar to the entire WSA with the exception of excluding 622 acres within allotment numbers 0057 and 0058.	The existing and potential use pertaining to forest products would be the same as the entire WSA.	The opportunities for the various recreation activities within the portion recommended suitable would be similar to those discussed in the entire WSA as a result of only a small portion recommended nonsuitable.	The existing and potential use of the portion recommended as suitable would remain the same as under the entire WSA.	The existing and potential uses of the portion recommended as suitable by Native Americans would remain the same as under the entire WSA.	The western boundary of the portion recommended lies within a proposed 500 kV transmission line corridor.	The existing and potential use of the area associated with wildlife would remain the same as under the entire WSA.
Portion Recommended Nonsuitable	No exploration or development activity associated with locatable, leasable or saleable minerals is occurring in this portion of the WSA. One oil and gas lease has been issued in this portion of the WSA, and one oil and gas application made. There are no producing wells. Exploration activity has been low.	No active or potential watershed treatment projects have been proposed.	This portion falls within allotment numbers 0057 and 0058. No range improvements are proposed for this area.	Because of low stand density, little use on the 622 acres is expected.	Though this area could provide opportunities for recreation, the size of 622 acres limits the amount of use which may occur in this area.	This portion could continue to be used for environmental studies.	Use of this portion of the WSA by Native Americans for traditional uses would continue.	No rights-of-way, easements, withdrawals, or permits are pending or anticipated in this portion.	No wildlife developments are planned for this area.

Source: BLM Albuquerque District Wilderness Analysis Reports, 1984.

TABLE 3-4
EXISTING AND POTENTIAL USES, TAOS RESOURCE AREA WSAs

WSA	Minerals	Watershed	Livestock Grazing	Forest Products	Recreation	Education/Research	Native American Uses	Realty Actions	Wildlife
Rio Chama WSA (formerly Navajo Peak) Entire WSA	The geologic structure indicates a potential for oil and gas. Most of the WSA has been leased, but no drilling has taken place. Small uranium occurrences have been found in the vicinity of the WSA. There is presently no activity pertaining to nonenergy minerals and the potential for discovery of valuable minerals is low due to geologic formations and accessibility.	The WSA contains water catchments which are used as water control structures. Water from the Chama and tributaries is utilized by livestock and wildlife. No watershed treatment projects are scheduled for the WSA.	Five grazing allotments are located within the WSA. Two with AMPs completed. No winter use. The WSA supports approximately 4,062 AUMs.	350 acres of commercial ponderosa pine (50,000 board feet) and 1,500 acres of noncommercial pinyon-juniper (15,000 cords). There are no specific plans for future timber harvests or issuance of permits or sales of the non-commercial woodland products.	Floatboating, fishing, hiking, camping and hunting all occur within the WSA. Floatboating is experiencing the greatest growth and is expected to increase in the near future. Approximately 1,200 people floated the river in 1982.	Environmental education excursions are occurring on the Chama River. U.S. Fish and Wildlife Service is studying fisheries and riparian habitat along the Chama River in the WSA. Three forestry study plots outside the canyon are located within the WSA.	No known significant uses.	There are no pending or anticipated rights-of-way, withdrawals, easements, or permits being considered for this portion of the WSA.	Mule deer and elk inhabit the area in small numbers. Fisheries habitat is plentiful with rainbow and German brown trout being the major game species. Potential introduction of the river otter and sage grouse within the WSA.
Portion Recommended Suitable	Low energy minerals potential; low non-energy minerals potential.	Water use is primarily by wildlife. No watershed treatment projects are scheduled for the portion recommended suitable.	A small portion of all five grazing allotments would be located in the area recommended as suitable.	Low potential for harvesting the commercial and noncommercial forest products due to inaccessibility. Sales in this area are unlikely.	Same as entire WSA.	Environmental education excursions on the Rio Chama and U.S. Fish and Wildlife Service fisheries and riparian habitat studies are occurring in this portion.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA with the exception of the introduction of the sage grouse.
Portion Recommended Nonsuitable	Low energy minerals potential; low non-energy minerals potential.	Within this portion are located water catchments used as water control structures. Water use primarily by livestock and wildlife.	Portions of all five allotments and most of the improvements are included within this area.	Favorable topography would allow the harvesting of forest products should any sales be planned in the future.	There is the potential for hiking, camping, hunting and ORV use in the area.	The three forestry study plots are locatable in this portion.	Same as entire WSA.	Same as entire WSA.	Potential for the introduction of the sage grouse. No fisheries habitat.
Sabinoso Entire WSA	Nearly all of the WSA is under lease for oil and gas, but no drilling or exploration has taken place. The potential for petroleum production is low. Three mining claims for uranium exist in the eastern portion of the WSA. Potential for valuable uranium deposits is unknown. The potential for non-energy leasable and saleable minerals is very low.	There are no existing productive uses for watershed purposes and no potential plans for watershed improvement within the WSA.	Nine grazing allotments are located within the WSA with the area supporting approximately 2,454 AUMs. An anticipated amendment to the Management Framework Plan for the area may include range improvement proposals for range management.	The potential for forest products consists of over 130 acres of ponderosa pine (20,000 board feet) and 1,000 acres of pinyon-juniper (3,000 cords). The denser stands of ponderosa pine and pinyon-juniper woodlands are found in the bottomlands along the lower slopes of the canyon and on the mesa tops in the southwest portion of the WSA. No harvesting is pending or anticipated.	Hunting and horseback riding make up the present recreational use of the area. Limited access precludes more hiking and camping opportunities.	No research or education study areas exist in the WSA.	No areas of religious significance are known.	No pending or anticipated realty actions are associated with this WSA.	Small numbers of mule deer, barbary sheep and imported ibex utilize the area's habitat. Water improvements would increase potential habitat values, however no specific plans have been scheduled at the present time for this area.
Portion Recommended Suitable	None.	None.	None.	None.	None.	None.	None.	None.	None.
Portion Recommended Nonsuitable	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.
San Antonio Entire WSA	No oil and gas leases are located in the unit. No locatable minerals are known to exist in the unit.	Several catchments provide water sources for livestock and wildlife. The Rio San Antonio has intermittent flows.	The WSA contains portions of four grazing allotments.	Minimal stands of pinyon-juniper offer low potential for fuelwood harvest.	ORV use occurs on the open plains of the unit. Some hiking within the Rio San Antonio canyon. Some antelope hunting opportunities are available on the open plains.	No research of education study is being conducted.	No known use of the area.	No realty actions are planned within the WSA. A telephone R.O.W. represents the eastern boundary.	The unit supports a year-long habitat for pronghorn antelope. Herd size varies between 40 and 120. The area is also utilized by elk as a migration route and wintering ground. Some mule deer also forage on the plain during winter months.
Portion Recommended Suitable	None.	None.	None.	None.	None.	None.	None.	None.	None.
Portion Recommended Nonsuitable	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.	Same as entire WSA.

CHAPTER 4

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

SUMMARY OF IMPACTS

Tables 4-1 and 4-2 summarize the environmental consequences described in the Wilderness Analysis Reports (WARS--located in Appendices A through H, published as a separate document). These tables describe only those impacts determined to be significant. If any of the WSAs is designated as wilderness by Congress, a management plan for it will be prepared. This plan will provide the opportunity to incorporate measures to preserve wilderness characteristics through management policies that prohibit certain activities and nonconforming uses that would adversely impact those wilderness characteristics.

SOCIAL AND ECONOMIC IMPACTS

All resources known to exist in the WSAs have been considered in relation to the potential impacts of wilderness designation on employment, income, investments, lifestyles and social values as they relate to quality of the human environment. The quantifiable impacts on local economy and social structure were not considered significant.

Local Attitudes and Perceptions

Wilderness designation would strengthen the negative feelings toward the BLM and the federal government of those who oppose wilderness, while increasing positive feelings toward these agencies by those who favor wilderness.

Wilderness designation is perceived by ranchers as adding a factor of uncertainty and instability to their lifestyle. This group fears use and operation restrictions following designation. Their ultimate fear is that the loss of ranch investment value and financing capability could result from wilderness designation. However, most ranchers with grazing permits for allotments in the WSA are not solely dependent on ranching for their livelihood; they are employed in non-ranching jobs.

Economic Conditions

Designation of an area as wilderness could affect the manageability of some livestock operations. For example, the livestock operator could incur inconveniences due to vehicular restrictions within the designated wilderness.

In practice, a BLM grazing permit has value for borrowing money and adding value to the base property of a ranch at the time of purchase or sale. Normally, when a loan is made, the Federal Land Bank loans approximately 65 to 70 percent of the market value per AUM. Those portions of the grazing allotments within the boundary of a designated wilderness could have a loan value of approximately 50 to 60 percent of the AUM market value (Ratliff 1982). Operators who require additional operating capital may experience an unfavorable economic impact if a portion of their grazing allotment is within a designated wilderness area, because the loan value could be 10 to 15 percent less for those AUMs within the wilderness area than it is for AUMs outside the wilderness area.

Wilderness designation would secure to the WSAs a value referred to as "preservation value". This value is of three types: (1) option value, defined as the willingness to pay for the opportunity to have access to wilderness areas for recreation use in the future; (2) existence value, defined as the amount of money people are willing to pay for the knowledge that natural habitat for plants, fish and wildlife are protected in wilderness areas; and (3) bequest value, defined as the willingness to pay for the satisfaction derived from endowing future generations with wilderness resources (Colorado State University, 1981).

The methodology developed for assigning economic quantification to this value was not used in this EA because it is still under review by the BLM. Also, local data is not available for quantification.

TABLE 4-1

SUMMARY OF ENVIRONMENTAL CONSEQUENCES, RIO PUERCO RESOURCE AREA WSAs

Alternative	Acreage	Minerals	Soils, Watershed, Vegetation	Livestock Grazing	Forest Products	Recreation	Visual	Cultural	Native American Uses	Wildlife	Education/Research	Wilderness Values
Cabezon WSA All Wilderness	8,118	Could significantly impact the potential to develop a small uranium mine and development of gypsum, sand, gravel and humate resources for regional demands.	Elimination of the proposed retention dams to slow gully erosion and sediment transport could have a significant impact. Protection of T&E plant species.	Elimination of the option to repair severe vegetation and soils damage on the Canyon del Camino Allotment could have a significant impact.	Could curtail illegal woodcutting.	Eliminate recreation activities which require motorized activity. Ensure existing opportunities based on natural environment, continue; particularly the climbing opportunity.	Existing visual resource maintained.	No impact.	Limited vehicular access could limit some uses. Would retain natural setting on which activities often depend.	Restrictions on surface disturbing activity would provide protection for habitat. Could reduce legal and illegal furbearer harvest. Restraints on animal damage control and construction of fence enclosures could occur. Water development would not occur, which could preclude expansion of existing resource.	Opportunities for geologic and cultural study could benefit significantly.	Wilderness values would benefit significantly through long-term Congressional protection.
Amended Boundary	6,555	Same as All Wilderness.	Would significantly benefit soils, watershed and vegetation by excluding the areas with serious erosion problems. It would allow implementation of erosion control projects.	Removal of Canyon del Camino Allotment and Cucho Arroyo Allotment could significantly benefit livestock operations by allowing erosion control projects, to arrest severe erosion problems and improve forage production.	Same as All Wilderness.	Conflicts with ORV use would be reduced.	Same as All Wilderness.	No impact.	Same as All Wilderness.	Some waters would be developed.	Same as All Wilderness.	Same as All Wilderness.
No Wilderness (Amend the Existing Plan)	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Action	8,118	Mineral exploration and development could continue.	Possible reduced watershed quality. Soil and vegetation loss. Less protection for T&E plant species. Conservation actions would occur in order to retard severe erosion in the southern portion.	Full implementation of AMPs, including development pipeline and waters.	No impact.	Primitive recreation opportunities would be reduced. ORV activities would continue.	Visual resources would be degraded.	No impact.	Natural setting on which these uses are often dependent, would be subject to surface disturbing activities.	Impact those species dependent on an unmodified environment. Allow a wider range of habitat management options, including full implementation of Rio Puerco Habitat Management Plan.	The potential of the "natural laboratory" setting could be significantly impacted from mineral development.	No long-term Congressional protection. Could significantly impact the wilderness values in the WSA.
Empedrado WSA ^{b/} All Wilderness	9,410	The potential to develop a moderate size coal mine, and gypsum, sand, gravel and humates for a regional demand would be eliminated.	Surface disturbing activities would be limited which would provide long-term protection.	Potential for slight impacts due to limitations on maintenance of existing improvements, and construction of new developments. Traditional use of pickup truck would be limited. Existing AUMs of use would be retained.	Illegal woodcutting could be curtailed.	Activities which require motorized activity would be restricted. Primitive and unconfined recreation opportunities would be preserved.	Existing resources would be protected.	No impact.	Prevention of vehicular access could limit current uses. However, preservation of solitude and naturalness could enhance activities.	Restriction of surface disturbing activities would provide protection for habitat. Both legal and illegal furbearer harvest should be reduced. Restraints on methods of animal damage control and construction of fenced enclosures could occur. Wildlife water developments associated with pipelines would likely not occur.	The "natural laboratory" would benefit significantly through preservation.	Wilderness values would benefit significantly through long-term Congressional protection.
Amended Boundary	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.

TABLE 4-1 (Continued)

Alternative	Acreage	Minerals	Soils, Watershed, Vegetation	Livestock Grazing	Forest Products	Recreation	Visual	Cultural	Native American Uses	Wildlife	Education/Research	Wilderness Values
Empedrado (Cont'd) No Action	9,410	Mineral exploration and development could occur.	<u>Watershed quality could possibly be reduced. Soil and vegetation loss could occur.</u>	Planned pipeline could be constructed. Use of pickup truck would not be limited.	No impact.	Primitive and unconfined recreation relies on a predominately natural environment which would not exist under a development oriented management.	Visual resources would be degraded.	No impact.	Natural settings on which uses are often dependent would be subject to surface disturbing activities.	Those species dependent on an unmodified ecosystem could be impacted. A wider range of management could occur, including development of wildlife waters and full implementation of Rio Puerco Habitat Management Plan.	Use as a "living laboratory" could be degraded.	<u>Wilderness values could be significantly impacted over the long-term.</u>
Ignacio Chavez WSA All Wilderness	9,961	The potential to develop a small coal mine would be eliminated. <u>The potential impacts to minerals could be significant since it would be withdrawn from appropriation under the mining laws and from leasing.</u>	The condition of existing resources would be maintained through limiting surface disturbing activities.	Possible limitations on maintenance of existing rangeland improvements and construction of new improvements. Traditional use of the pickup truck would be limited. Existing AUMs of grazing would be retained.	No impact.	Activities which require motorized activity would be limited. <u>Primitive and unconfined recreation opportunities would be significantly benefited.</u>	Existing resources would be maintained. No significant impact.	No impact.	Prevention of vehicular access could limit Native American uses. However, preservation of solitude and naturalness could enhance activities.	Restrictions of surface disturbing activities would maintain existing habitat.	<u>The opportunity to study the natural setting would benefit significantly through the long-term protection.</u>	<u>Wilderness values would benefit significantly through Congressional protection.</u>
Amended Boundary	8,780	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	No impact.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.
No Action		The potential for exploration and development of the mineral would benefit significantly through less conflicts.	Soil and vegetation loss may occur from surface disturbing activities. Watershed quality could be reduced.	No significant impact; however, if mineral development occurs, current use authorization could be reduced. Range facilities could be constructed. Use of motorized equipment would not be restricted.	No impact.	<u>Opportunities for primitive recreation could be significantly impacted.</u>	Visual resources could be significantly impacted if mineral development occurs.	No impact.	The natural setting on which uses are often dependent would be subject to surface disturbing activities.	Wildlife and habitat could be disturbed through mineral development. Wildlife habitat management activities would benefit.	<u>The natural setting could be significantly impacted if mineral development occurs.</u>	<u>Wilderness values could be significantly impacted over the long-term by resource development.</u>
La Lena WSA b/ All Wilderness	10,310	<u>Could have a significant impact to mineral development. It would eliminate the potential for development of a potential coal mine, and possible gypsum, sand, gravel, and humate resources for regional demand.</u>	Surface disturbing activities would be limited which would provide long-term protection, including threatened and endangered species.	Possible limitations on maintenance of existing range improvements; traditional use of the pickup truck would be limited. Existing AUMs of use would be retained. No significant impact.	No impact.	Activities which require motorized activity would be limited.	Existing resources would be protected.	No impact.	Prevention of vehicular access could limit current uses. However, preservation of solitude and naturalness could enhance activities.	Restrictions on surface disturbing activity would provide protection for habitat, particularly San Luis Mesa raptor habitat. Restrictions on animal damage control could occur.	<u>Ensure preservation of existing "natural laboratory".</u>	<u>Wilderness values would benefit significantly through long-term Congressional protection.</u>
Amended Boundary	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Action	10,310	Mineral exploration and development could continue.	Possibly reduce watershed quality. Soil and vegetation loss could occur.	Use of pickup truck would not be limited.	No impact.	No limitations on motorized activity.	Visual resources would be degraded.	No impact.	Natural settings on which uses are often dependent would be subject to surface disturbing activities.	Those species dependent on an unmodified ecosystem could be impacted, especially raptor species.	<u>The potential for use as a "natural laboratory" could be significantly impacted.</u>	<u>Wilderness values could be significantly impacted over the long-term.</u>

TABLE 4-1 (Concluded)

Alternative	Acreage	Minerals	Soils, Watershed, Vegetation	Livestock Grazing	Forest Products	Recreation	Visual	Cultural	Native American Uses	Wildlife	Education/Research	Wilderness Values
Ojito WSA All Wilderness	11,919	<u>Could significantly impact the potential to extract possible gypsum, sand, gravel, and humate resources for regional demands.</u>	Surface disturbing activities would be limited, which would provide long-term protection, including T&E species.	Possible limitations on maintenance of existing range improvements and construction of new improvements.	Illegal woodcutting could be curtailed.	Activities which require motorized activity would be limited. Primitive and unconfined recreation opportunities would be	Existing resources would be protected.	No impact.	Prevention of vehicular access could limit current uses. However, preservation of solitude and naturalness could enhance activities.	Restrictions on surface disturbing activities would provide protection for habitat. Should reduce both legal and illegal furbearer harvest. Retrictions on methods of animal damage control and construction of fence exclosures could occur.	<u>The "natural laboratory" setting would benefit significantly through long-term protection.</u>	<u>Wilderness values would benefit significantly through long-term Congressional protection.</u>
Amended Boundary	11,297	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.	Same as All Wilderness.
No Wilderness (Amend the Existing Plan)	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Action	11,919	<u>Mineral exploration and development would benefit significantly.</u>	Possibly reduce watershed quality. Soil and vegetation loss could occur.	Planned pipeline could be construction. Use of pick-up truck would not be restricted.	No impact.	Primitive and unconfined recreation relies on a predominately natural environment which would not exist under development oriented management.	Visual resources would be degraded.	No impact.	Natural settings on which uses are often dependent would be subject to surface disturbing activities.	Those species dependent on an unmodified habitat would be impacted. A wider range of habitat management activities could occur, with full implementation of the Rio Puerco Habitat Management Plan.	<u>Potential for use as "natural laboratory" could be significantly impacted.</u>	<u>Wilderness values could be significantly impacted over the long-term.</u>

Source: BLM Albuquerque District Wilderness Analysis Reports, 1984.

a/ Significant impacts are underlined.

b/ For this WSA, the No Wilderness Alternative (Amend the Existing Plan) was analyzed in the Draft EA. However, this alternative has been dropped from consideration in the Final EA. Those areas considered for special designation will be carried forward in the Rio Puerco Resource Area Resource Management Plan.

TABLE 4-2

SUMMARY OF ENVIRONMENTAL CONSEQUENCES, TAOS RESOURCE AREA WSAs ^{a/}

Alternative	Acreage	Minerals	Soils, Watershed, Vegetation	Livestock Grazing	Forest Products	Recreation	Visual	Cultural	Native American Uses	Wildlife	Education/Research	Wilderness Values
Rio Chama WSA (formerly Navajo Peak) All Wilderness	11,985	No significant impact to mineral development because of low mineral potential.	Treatment of watershed would be restricted to non-motorized equipment. Surface disturbing activities would be limited.	No significant impact on the range program because current levels of use may continue with no new developments pending.	Harvesting of 50,000 board feet of ponderosa pine and 1,500 cords of pinyon-juniper would not be allowed, however no specific plans for harvesting are pending. No significant impact.	Restrictions on ORV use would have a low to moderate impact above the canyon rims. <u>The natural values and outstanding primitive recreation opportunities would benefit significantly through preservation and protection.</u>	Visual resources would be protected.	Would prevent impacts through vehicular access restrictions. Low impact would restrict site stabilization and excavation.	No impact since there is no indicated use in this area.	<u>Would significantly benefit habitat privacy by restricting motorized equipment from the unit.</u>	No impact from research and studies as it is considered an important use of the wilderness resource and as long as it is being conducted in such a manner as to preserve the area's wilderness character.	<u>The wilderness values would benefit significantly through long-term Congressional protection.</u>
Amended Boundary	5,232	No significant impact due to location and access to minerals below the canyon rims. Mineral potential is considered low.	Would provide protection from development on the canyon side slopes thus limiting soil and vegetation disturbance.	No significant impact on the range program as use levels can continue and the hindrance to maintenance with motorized equipment would be lessened.	No significant impact commercial timber harvesting and fuelwood gathering since the primary area in which these activities would most likely occur has been excluded.	<u>Significant positive impacts would result as the outstanding primitive recreation experience would be protected along the Rio Chama and ORV restrictions would not be increased outside the inner canyon.</u>	The higher quality visual resources in the Chama Canyon would be protected. The area outside the boundary would be maintained as a VRM Class III in which disturbance may be evident but should remain subordinate to the natural character.	Historical sites along the river banks would be protected.	No impact since there is no indicated use occurring in the area.	<u>Would significantly benefit the canyon wildlife habitat which is critical along the river corridor.</u>	Same as All Wilderness.	<u>Wilderness values within the amended boundary would benefit significantly through the long-term by Congressional protection.</u>
No Wilderness (Amend the Existing Plan)	5,232	No significant impact due to location of mineralized area being primarily above the canyon rims, and a low potential for development.	Enhance watershed values through increased protection and management. Surface disturbing activities would be minimal due to terrain limitations.	No significant impact on the range program as it would be allowed to continue at its present level.	Same as Amended Boundary.	<u>Significant positive impacts through preservation of the primitive recreation experience in the Rio Chama Canyon and minimal ORV restrictions above the rim areas.</u>	Visual resources would be protected within the area managed under special designation.	Historical sites along the river banks would be protected.	No impact, since there is no indicated use occurring in the area.	Positive benefits through protection of the critical wildlife habitat along the river corridor.	No impact as it appears that the current research and studies have not had any noticeable adverse impact to the area.	Wilderness values of the Rio Chama would be preserved by protective management.
No Action	11,985	No significant impact as a result of low potential for mineral development.	No significant impact as the potential for new development which may result in soil disturbance and vegetation modifications is low.	No significant impact to current livestock use levels and maintenance of improvements.	No impact since no specific plans for harvesting are pending.	<u>Significant adverse impacts could result due to lack of protection for the primitive recreation experience that protective management would afford the Rio Chama Canyon. Motorized recreation uses could continue.</u>	Visual resources would be maintained by the existing VRM Class II and III management objectives.	Unrestricted access would leave the cultural sites subject to increased vandalism.	No impact, since there is no indicated use occurring in the area.	Would create the potential for reduction in habitat privacy, surface character and stability of the productive wildlife area through the lack of protective management.	Same as No Wilderness.	<u>Wilderness values may be lost due to a lack of protective management which could significantly impact the natural values of the Rio Chama Canyon.</u>
Sabinoso WSA All Wilderness	15,760	No significant impact on mineral development since the potential for mineral development has been considered low.	Restrictions on surface disturbing activities would provide long-term protection to soils and vegetation within the WSA. No impact to watershed improvements since none have been planned for in the near future.	No impacts to current levels of authorized use. Minor inconvenience due to restricted vehicular access.	The potential for harvesting 20,000 board feet of ponderosa pine and 3,000 cords of fuelwood would be prevented.	No significant impact on primitive type recreation use (hiking, camping, hunting, etc.).	No impact. Visual resources would be protected.	No significant impacts. Protective management and vehicular access restrictions would minimize impacts.	No impacts.	Positive impact on ensuring habitat privacy through limitation of vehicles. Also potential for a low negative impact due to increase in recreation users in the area.	No impacts.	<u>The wilderness values would benefit significantly through the long-term by Congressional protection.</u>
Amended Boundary	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Wilderness (Amend the Existing Plan)	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Action	15,760	Since the opportunity for exploration and development is still available there would be no significant impact.	No impact since the existing condition of these resources would essentially remain unchanged.	No impact as use would continue at its present level and maintenance could be done with the convenience of motorized equipment.	No impact as no harvesting is anticipated. If harvesting is authorized, the potential would be low due to terrain and legal access limitations.	No significant impact to the recreation resource due to lack of present legal access.	No significant impact. The condition of visual resources would essentially remain unchanged since no major developments are planned for area.	No impacts on cultural resources in the area.	No impacts.	No impact due to limited use and resource development in the area.	No impacts.	<u>No significant short term impacts but wilderness values could be significantly impacted over the long-term by resource development.</u>

TABLE 4-2 (Concluded)

Alternative	Acreage	Minerals	Soils, Watershed, Vegetation	Livestock Grazing	Forest Products	Recreation	Visual	Cultural	Native American Uses	Wildlife	Education/Research	Wilderness Values
San Antonio All Wilderness	7,050	Exploration and development of minerals would be prevented. The potential for mineral development has been determined to be low. No significant impact.	Restrictions on surface disturbing activities would provide long-term protection to soil and vegetation. Watershed treatment would be restricted to nonmotorized equipment.	No significant impact on the range program, since current level of use could continue and no new developments are currently planned for construction.	No existing or anticipated timber harvests or vegetative sales. No impact.	Restrictions on vehicular access would occur but would have no significant impact on present use. Hiking and backpacking would be enhanced by wilderness designation.	Visual resources would be protected. No impact.	No significant adverse impacts. Sites would be protected. Site vandalism by individuals gaining access with motorized vehicles would decrease.	No impacts.	Would improve habitat privacy by restricting motorized vehicles. Antelope habitat would benefit primarily. No significant impact.	No impacts.	<u>Wilderness values would benefit significantly through long-term Congressional protection.</u>
Amended Boundary	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Wilderness (amend the existing plan)	0	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.	For this WSA, this alternative was not assessed.
No Action	7,050	No significant impact, since the potential for mineral development is low.	No significant changes in the watershed conditions or disturbance to soils and vegetation are expected to occur.	No impacts to the range program. See All Wilderness.	No impact, since no timber harvests or vegetative sales are anticipated.	The potential for protection of the primitive qualities of the Rio San Antonio Canyon would not be addressed and could be impacted by increased ORV use. No significant impact.	Visual resources would be maintained as rated. VRM Class II and III. No significant impact.	No impacts.	No impacts.	No significant impacts to wildlife.	No impacts.	Wilderness values would not be impacted significantly unless increased ORV use began disturbing the solitude of the Rio San Antonio.

Source: BLM Albuquerque District Wilderness Analysis Reports, 1984.

Note: a/ Significant impacts are underlined.

CHAPTER 5

CONSULTATION AND COORDINATION

PURPOSE OF SCOPING

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) provide for an early and open process to determine the scope of issues to be addressed in an environmental analysis, and to identify the significant issues related to the proposed alternatives. This process is termed "scoping". In addition, scoping requires the lead agency to inform and involve affected federal, state, and local agencies, Indian tribes, and other interested parties. The process is designed to identify and emphasize the significant issues and eliminate from detailed consideration those that are either not significant or have been covered by earlier environmental review. This process results in a more concise document.

SCOPING ACTIVITIES

During the study phase of the wilderness review process, various federal, state and local agencies, interest groups, Indian tribes, and individuals were contacted. These contacts were made to inform the public about the wilderness study process, gather resource information, and identify significant issues to incorporate into the Wilderness Analysis Reports (WARs). An extensive mailing list has also been assembled throughout the wilderness inventory and study process to ensure that all interested parties are kept informed of the progress of the wilderness review.

An overview of public involvement (along with other consultation and coordination efforts by both Resource Areas) is included in the WARs located in the Appendix. The concerns voiced by the public at the open houses held during March 1982 and through their letters have been varied. The primary issue expressed by the proponents of the designation of various WSAs is the need to preserve or protect the natural character and wilderness values. Opponents have highlighted such problems as the presence of human impacts and the possible limitations that wilderness designation would have on mineral development and livestock operations in the WSAs.

The comments on the draft documents have contributed to the nature and scope of this Final EA. Comments on the Draft EAs were sought from other government agencies, Indian tribes, interest groups and individuals.

PUBLIC REVIEW OF THE DRAFT DOCUMENTS

Beginning in March 1983, the Bureau of Land Management (BLM) Albuquerque District asked the public to comment on the preliminary wilderness suitability recommendations made by the Area Managers for seven WSAs. This was done through the release of the Albuquerque District Wilderness Draft Environmental Assessment (BLM 1983). The comment period on this document ended on June 30, 1983.

This Environmental Assessment (EA) excluded the Ignacio Chavez WSA. The Ignacio Chavez WSA was being reinventoried and studied based upon its

newly defined boundaries, which excludes "split-estate" lands. The preliminary wilderness suitability recommendation on the Ignacio Chavez WSA was released along with those for six other WSAs in the state. It was released to the public on August 12, 1983 in the New Mexico Wilderness Supplemental Draft Environmental Assessment (USDI, BLM 1983). The comment period for this supplemental EA extended from August 12, 1983 through October 14, 1983.

During the comment periods for the two draft EAs, a total of 297 inputs were received on the Albuquerque District's wilderness suitability recommendations. The public inputs fell into two categories: (1) those that made general statements supporting or opposing wilderness designation as a whole, and (2) those that made specific statements either favoring or opposing wilderness suitability for a specific WSA or a specific group of WSAs. (A single comment letter could contain one or more inputs, therefore the number of inputs will vary from the number of comment letters received.)

Approximately 85 percent of the inputs received supported the recommendation of wilderness suitability for the WSAs. The remaining 15 percent opposed wilderness designation of the WSAs. Table 5-1 summarizes these positions by WSA.

TABLE 5-1

NUMBER OF INPUTS SUPPORTING OR
OPPOSING WILDERNESS DESIGNATION

WSA	Supporting	Opposing	Total
Cabazon	29	5	34
Empedrado	19	10	29
Ignacio Chavez	111	2	113
La Lena	17	13	30
Ojito	23	3	26
Rio Chama	22	1	23
Sabinoso	20	7	27
San Antonio	<u>11</u>	<u>4</u>	<u>15</u>
TOTALS	252	45	297

Source: BLM Public Comment Analysis Report for the Draft Environmental Assessment Wilderness Study Areas in the Albuquerque District, 1984.

Most of the inputs presented by the public supported wilderness designation of all eight WSAs. Specific comments or reasons for supporting designation for a particular WSA are discussed in more detail in the individual WARs (published as a separate document from this EA).

In general, many of the primary reasons cited for supporting wilderness designation were a WSA's naturalness, outstanding opportunities for solitude, opportunities for primitive and unconfined recreation, and special features. Many people felt a need for BLM to preserve these values; they see Congressional designation as wilderness as the best way to protect those values over the long term.

Commentors expressed the need for proper management of the BLM's natural resources through wilderness designation to ensure their availability for future generations as well as for present users. They felt that so much land is being destroyed in one way or another that every acre that can be preserved as part of an ecological unit is important, not only for people to enjoy but for scientists to study.

Others who support wilderness designation commented that by designating these WSAs as wilderness, the availability of areas with quality wilderness values would be increased near the higher population areas of Albuquerque and Santa Fe. It was expressed that many of these WSAs were easily accessible, especially those located in the Rio Puerco Resource Area. These WSAs located at lower elevations would provide excellent opportunities for solitude, and opportunities to participate in primitive recreation activities during the winter (when use of the high-elevation wilderness areas is limited due to snow, cold temperatures, and restricted access).

For the four WSAs recommended as nonsuitable for wilderness designation, a majority of the inputs supported wilderness designation. The excellent wilderness values present, the areas' manageability as wilderness, and the need to protect such values as naturalness, scenery and wildlife were some of the main reasons expressed for the need to designate these areas as wilderness. Several commentors expressed that management of the La Lena and Empedrado WSAs under special designation would not guarantee permanent protection for the areas' values. For the San Antonio WSA, a concern was expressed about the need to preserve a representative sample of the high rolling grasslands type (felt to be under-represented in the National Wilderness Preservation System).

It should be noted that the concerns expressed about designating wilderness areas near population centers and adding diversity to the National Wilderness Preservation System will be further analyzed in the BLM New Mexico Statewide Wilderness Environmental Impact Statement (EIS). This statewide EIS will analyze individual BLM wilderness recommendations in the broader context of other federal lands already designated or to be recommended as wilderness. The analysis will be based on three factors: (1) expanding the diversity of natural systems and features, as represented by ecosystems and landforms; (2) opportunities for solitude or primitive recreation within a day's drive (5 hours) of major population centers; and (3) balancing the geographic distribution of wilderness areas.

Most of those who expressed opposition to wilderness designation felt that the need for mineral development such as oil and gas, coal and uranium under the WSAs is more pressing and important to the local economy, as well as the state's and country's welfare, than wilderness preservation.

Comments submitted by the mineral industry and associated organizations stated wilderness recommendations should be re-evaluated when the potential for mineral development exists, to exclude these WSAs. This is an issue of concern because designated wilderness areas will be withdrawn from appropriation under the mining and leasing laws. The BLM, prior to the preliminary wilderness suitability recommendations being forwarded to the President, will request additional mineral surveys by the United States Geologic Survey and the Bureau of Mines to evaluate the mineral potential of these WSAs.

Other commentators expressing opposition to wilderness designation have felt that designation would result in increased recreation visitor use to these remote areas, resulting in trespassing on private lands, vandalism, and manageability problems. Other reasons for opposing wilderness designation centered around what was felt to be a specific WSA's lack of outstanding wilderness values. Some felt that man's imprints were too noticeable or that some WSAs lacked naturalness.

In the case of the Sabinoso WSA, the inputs and comments presented in opposition to wilderness designation caused the BLM to re-evaluate its Preferred Alternative. The primary issue raised concerned the manageability of the WSA. After careful consideration of the comments presented and re-evaluation of the information presented in the Sabinoso Wilderness Analysis Report, the Preferred Alternative for the Sabinoso has been changed to a nonsuitable recommendation for the entire WSA.

Numerous comments questioned the BLM's treatment of livestock grazing and the operation of the involved allotments. Those opposing wilderness designation fear it would place limitations on ranch operators. However, those supporting wilderness designation have commented that protection of the WSAs from surface-disturbing activities such as mineral development would benefit livestock grazing. Analysis in this EA has shown that overall, no significant impacts would occur to livestock operations in the WSAs should they be designated wilderness.

Also, a number of comments were received that addressed the adequacy or accuracy of the information and alternatives presented in the draft environmental documents and WARs. These substantive comments on specific WSAs are discussed and responded to in Section 5 (Public Involvement Overview) of the appropriate WAR.

Some commentators also discussed general topics such as the wilderness program, the BLM's wilderness study procedures, the BLM and the current government administration, and other resource values in the WSAs or the regions surrounding the WSAs.

Several other general comments discussed the possibilities of land exchanges or acquisition of inholdings. Many of those discussing this topic felt that acquiring these lands would provide for more effective management of

a certain WSA. For example, tracts of state trust lands were identified in the Cabezon and Ojito WSAs in comments received from the New Mexico Commissioner of Public Lands. It was expressed that the BLM and the state should actively pursue a land exchange prior to official wilderness designation. On the other hand, one private landowner opposed wilderness designation because of fears that designation would place restrictions on future development and use of his property.

The BLM has not initiate negotiations for land exchanges or acquisitions with the State of New Mexico or private landowners during the wilderness study process. The suitability of a BLM WSA for designation should not be dependent upon acquiring non-federal lands. A WSA recommended a suitable for wilderness designation must have quality wilderness values and be manageable based on its own merits.

Overall, the BLM's evaluation of the inputs resulted in the change of the Preferred Alternative for the Sabinoso WSA, and in the expansion of the amended boundary for the Rio Chama WSA. The entire Sabinoso WSA was previously recommended suitable for wilderness designation, but it is now being recommended as non-suitable. The Rio Chama WSA's name was changed and the boundary was extended further out from the rim of the Chama Canyon. That portion recommended suitable has been expanded and should be sufficient to provide adequate protection. Otherwise, public comments presented no new perspectives or substantive information that have caused a change in the BLM's evaluations and proposals.

LIST OF PREPARERS

A list of persons involved in the preparation of the Wilderness Analysis Reports and Environmental Assessment is provided in Table 5-2.

TABLE 5-2

LIST OF PREPARERS

Name	Report Writers/Reviewers		
	Assignment	Education	Experience
John Bristol	EA and WAR Coordinator	BS Landscape Architecture	BLM - 2 yrs., - Outdoor Recreation Planner, 5 yrs., Landscape Architect
Angela Berger	Recreation, Visual Resources, Wilderness Criteria	BS Secondary Education MS Outdoor Planning	BLM - 4 yrs. Outdoor Recreation Planner 2 yrs. District Wilderness Program Leader, 1 yr. Sup. Multi-Resource Staff (RPRA)
Don Brewer	Threatened and Endangered Species, Wildlife	BS Wildlife Management	BLM - 6 yrs. Wildlife Biologist, 2 yrs. Range Conservationist
Harry DeLong	Minerals	Geology Student	BLM - 1 yr. Physical Science Technician, 2 1/2 yrs. Draftsman
Kent Hamilton	Social and Economic Factors	BS Agricultural Economics	BLM - 6 yrs., BIA - 16 yrs. Economist and Land Use Planner
Bill Holsheimer	Geology, Minerals	BA Geology	BLM - 12 yrs. Geologist
Tom Mottl	Soil, Watershed	BS Chemistry MS Watershed Science	BLM - 4 yrs., USGS - 1 yr. Hydrologist
Darrell R. Musick	Forest Products, Range	BS Agricultural Economics	BLM - 10 yrs., NRS - 3 yrs. Economist
Bill Overbaugh	Photography, Recreation, Visual Resources, Wilderness Criteria	BS Natural Resources	BLM - 2 yrs. Recreation Technician
Richard Speegle	Recreation	BA Recreation MA Recreation/Land Use Planning	BLM - 6 yrs. Recreation Planner

TABLE 5-2 (concluded)

<u>Report Writers/Reviewers</u>			
Name	Assignment	Education	Experience (BLM)
Sarah Spurrier	Editor	BA Psychology	BLM - 7 yrs. Writer/Editor
Gene Tatum	Livestock Grazing	BS Range Science	BLM - 6 yrs. Recreation Planner
Jim Turner	Minerals	BS Geology	BLM - 5 yrs., Bureau of Reclamation - 4 yrs. Geologist
Dwain Vincent	Air Quality, Ecotypes, Vegetation, Water, Watershed	BS Forestry	BLM - 17 yrs. Range Conservationist
<u>Support Personnel</u>			
Name	Experience (BLM)	Name	Experience (BLM)
Myrna Finke	2 yrs. Visual Information Specialist	Irene Rivera	2 yrs. Clerk Typist
Betty Sladek	4 yrs. District Planning Coordinator	Shirley Torres	2 yrs. Supervisory Clerical Assistant
Sandra Johnson	2 mos. Clerk Typist	Mary Zuschlag	4 yrs. District Environmental Coordinator

GLOSSARY

AGRARIAN. Of land or land tenure; of agricultural groups and their welfare.

ALLUVIAL AQUIFER. An aquifer that consists of stream-deposited, unconsolidated clay, silt, sand, and gravel.

ALLUVIAL CHANNEL. The central part of a streambed, in this instance formed on unconsolidated valley fill deposits.

ANASAZI. A cultural stage associated with the development of an agricultural economy (ca. A.D. 450-1350 in the central San Juan Basin). This stage encompasses Basketmaker Periods (characterized by basketry and pithouse villages) and Pueblo Periods (characterized by pottery and villages of solid masonry construction).

ANIMAL UNIT (AU). Considered to be one mature (1,000 lb.) cow or its equivalent based upon average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM). The amount of forage required to sustain the equivalent of one cow, one horse, two elk, three Barbary sheep, five domestic sheep, five goats, five deer, or ten antelope for one month.

AQUIFER. A rock unit that contains water and is permeable enough to transmit this water to wells and springs.

ARCHAIC. A cultural stage of mobile, small-game hunter/gatherers (ca. 5500 B.C.-A.D. 450 in the central San Juan Basin).

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). An area within the public lands where special management attention is required (when such areas are developed or used, or where no development is required) to protect the area and prevent irreparable damage to important wilderness, cultural, recreational, paleontological, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ARROYO. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium. Regional southwest term for wash.

ARTESIAN CONDITIONS. Ground water that is under sufficient pressure (always greater than atmospheric) to rise above the top of the aquifer containing it. This ground water does not necessarily rise to or above the land surface. Artesian is synonymous with confined.

ARTESIAN PRESSURE. Ground water under sufficient pressure to cause the water level in a drilled hole to rise above the top of the rock unit.

ARTIFACT. An object produced or shaped by human workmanship.

BEDROCK AQUIFER. An aquifer that consists of consolidated material.

BRITISH THERMAL UNIT (Btu). The heat needed to raise one pound of water 1° F. A Btu is equal to 252 calories.

CHACOAN OUTLIERS. More than 70 prehistoric pueblo communities connected by a system of roads and visual communication into a sophisticated socioeconomic complex centering on the Chaco Culture National Historical Park (ca. A.D. 828-1178).

CULTURAL RESOURCE DATA. Cultural resource information embodied in material remains and manifested in studies, notes, records, diaries, analyses, and published and unpublished manuscripts.

CULTURAL RESOURCE INVENTORY CLASSES. Class I - existing data inventory - an inventory study of a defined area designed (1) to provide a narrative overview (cultural resource overview) derived from existing cultural resource information, and (2) to provide a compilation of existing cultural resource site record system. Class II - sampling field inventory - a sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in manner which will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area. The Class II inventory is a tool to be utilized in management and planning activities as an accurate predictor of cultural resources in the area of consideration. The primary area of consideration for the implementation of a Class II inventory is a planning unit. The secondary area is a specific project in which an intensive field inventory (Class III) is not practical or not necessary. Class III - intensive field inventory - an intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area. Upon completion of such inventories in an area, no further cultural resource inventory work normally is needed. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

CULTURAL RESOURCE MANAGEMENT. The development and implementation of programs designed to inventory, evaluate, protect, preserve, and/or make beneficial use of cultural resources (including evidence of prehistoric, historic, and recent remains) and the natural resources that figures significantly in cultural systems. The objective of such programs is the conservation, preservation, and protection of cultural values through management, and the scientific study of these resources for the public good.

COMPONENT. The manifestation of any given cultural episode in the history of a locality or a region. Sites containing the residue to a single episode of habitation or other group activity are referred to a single component sites. A site with more than one episode of occupations is referred to as a multicomponent site.

CUESTA. Used in the southwestern U.S. for a sloping plain which is terminated on one side by a steep slope.

CYSTS. A subsurface storage vault usually lined with fire hardened clay. Ranging from a gallon or so in size to some over 6 feet in depth and 2-4 feet wide. Usually located in proximity to living areas and food processing areas. Frequently used as burial crypts.

DISCRETIONARY LEASING. Leasing of certain resources at the discretion of the Bureau.

ECOTYPE. An existing plant community with distinguishable characteristics described in terms of the dominant vegetation present (as per Bailey-Kuchler).

EPHEMERAL ARROYO (INTERMITTENT STREAM). A stream or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is at all times above the water table.

ESCARPMENT. A steep face terminating high lands abruptly.

EVAPOTRANSPIRATION. A collective term meaning the loss of water to the atmosphere from both evaporation and transpiration by vegetation.

FIRE RINGS. A primitive fireplace which consists of stones placed in a small circle on or in the ground.

FORESTRY. Class 1 - Juvenile - Below 12 inches diameter; seedlings, saplings, and poles. Age ranging between 20-80 years. Class 2 - Blackjack Class - Trees have dark bark; relatively short, rapidly tapering bole, a pointed or rounded top, and ascending upper branches. Vigorous growth. Class 3 - Intermediate Age Class - Bark turning from black to yellow or brown. Boles are longer and less tapering than those blackjacks of the same diameter. Growth almost as vigorous as blackjack. Class 4 - Yellow Pine Class - 200 to 300 years old. Reddish yellow or cinnamon brown bark on all sides of the bole (trunk). Large trees.

GRANDFATHERED USES. Means the "continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on October 21, 1976.

GULLY EROSION. Erosion of soil or soft rock material by running water that forms distinct narrow channels that are 1 square foot or more in cross-section and that usually carry water only during and immediately after heavy rains or following the rapid melting of ice or snow.

HEMITRYPA. A bryozoan of Silurian to Mississippian age having a fine network superstructure on the obverse side and supported by spines along the carinae.

INSTANT STUDY AREAS. All primitive or natural areas formally identified by the BLM prior to November 1, 1975. Such areas were included in Section 603 of the Federal Land Policy and Management Act to be studied for wilderness suitability and recommended to the President in much the same way as Wilderness Study Areas are studied and recommended.

LEASABLE MINERALS. Minerals such as coal, oil shale, oil and gas, potash, sodium, sulphur in New Mexico and Louisiana, silica deposits in certain parts of Nevada, geothermal resources and all other minerals that may be acquired under the Mineral Leasing Act of 1920, as amended.

LOCATABLE MINERALS. Minerals that may be acquired under the Mining Law, as amended.

MCCARTYS SYNCLINE. A north northeast trending fold in rocks, originating in the vicinity of McCartys, NM and terminating in the Ignacio Chavez Land Grant, in which the strata dip inward from both sides toward an axis.

OSTRACON. A small bivalved animal inhabiting both salt and fresh water. These crustaceans have lived since Ordovician time and have shells which are molted with growth.

PUBLIC LAND. Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- lands located on the Outer Continental Shelf;
- land held for the benefit of Indians, Aleuts, and Eskimos; and
- lands in which the United States retains the minerals, but the surface is private.

PIPING. The formation of underground channels that result in gullies and sinkholes.

RANGE SITE. A distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. It is capable of supporting a native plant community typified by an association of species that differs from that of other range sites in the kind of proportion of species or in total production.

RANGE IMPROVEMENT. Any facility or structure built for livestock grazing and designed to control patterns of use, provide water, and stabilize soil and water conditions.

RILL EROSION. The development of a channel or channels with less than 1 square foot cross-section, initiated by numerous irregularities in the ground surface and resulting in the uneven removal of surface soil by running water that is concentrated in streamlets of sufficient volume and velocity to generate cutting power. It may be an intermediate process between sheet erosion and gully erosion.

RECREATION MANAGEMENT AREA. Sub-units of Resource Areas that serve as basic land units for recreation management. Each area is identified and managed as a unit based on similar or interdependent recreation values, homogenous or interrelated recreation use, land tenure and use patterns, or administrative efficiency.

SALEABLE MINERALS. Minerals such as common varieties of sand, stone, gravel, cinders, pumice, pumicite and clay that may be acquired under the Minerals Act of 1947, as amended.

SHEET EROSION. Erosion in which thin layers of surface material are gradually removed from sloping land by storm runoff in minute, numerous, and localized pulses of running water flowing overland rather than by streams flowing in well-defined channels.

STANDARD METROPOLITAN STATISTICAL AREAS (SMSA). A county containing at least one city of 50,000 inhabitants or more, plus as many adjacent counties as are metropolitan in character and are socially integrated with that central city or cities.

SUBHORIZONTAL. Approximating the horizontal.

SUPPLEMENTAL VALUES. Those features that include "ecological, geological, or other features of scientific, educational, scenic, or hisorical value".

TRIBUTARY WATERSHED. A contributory watershed that flows into a larger one.

UNDERSTORY. Those trees and woody species growing under the upper or uppermost canopy layer.

UPLAND EROSION. Generally the wearing away of the land surface by running water, wind, ice, or other geologic agents including such processes as gravitational creep, detachment and movement of soil or rock by water, wind, ice or gravity. Includes rill, sheet and gully erosion.

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REFERENCES

- Bailey, Robert G. 1980. Description of the Ecoregion of the United States. Misc. Publ. No. 1391. Ogden, Ut.
- Clark, Ronnie D. 1973. Rio Puerco Watershed Management Plan (unpublished). Albuquerque, New Mexico.
- Craig, Steven D. 1980. Hydrogeology and Water Resources of the Chico Arroyo/Torrean Wash Area, Sandoval and McKinley Counties, New Mexico. M.S. Thesis. New Mexico Institute of Mining and Technology. Socorro, New Mexico.
- Dortignac, E. J. 1962. An 1890 Irrigation Venture in the Rio Puerco. New Mexico Professional Engineer. Vol. XIV, No. 3.
- Elliott, John Grant. 1979. Evolution of Large Arroyos - The Rio Puerco of New Mexico. M.S. Thesis. Colorado State University. Fort Collins, Colo.
- Kelley, V. C., and Wood, G. H. Jr. 1946. Lucero Uplift, Valencia, Socorro, and Bernalillo Counties, New Mexico: U. S. Geological Survey Oil and Gas Inv. Prelim. Map 47.
- Knight, J. Paul. 1982. Investigation Into the Flora of Several BLM Wilderness Study Areas in the Albuquerque District. New Mexico State Heritage Program, Department of Natural Resources. Santa Fe, New Mexico.
- Kuchler, A. W. 1964. Potential Natural Vegetation of the Conterminous United States, American Geographical Society Special Publication No. 36. New York, New York.
- Moench, R. H. and Schlee, J. S. 1967. Geology and uranium deposits of the Laguna District, New Mexico. U. S. Geological Survey, Prof. Paper 519.
- New Mexico Department of Game and Fish. 1981. Annual Harvest Statistics. Unpublished data.
- New Mexico Soil and Water Conservation Division. 1980. Resource Conservation Act Appraisal. Santa Fe, New Mexico.
- Potter, L. D. and J. C. Krenetsky. May 1967. Plant Succession with Released Grazing on New Mexico Rangelands. Journal of Range Management.
- Ratliff, E. Federal Land Bank. 1980 Market Value of Animal Unit Months. (Telephone Conversation) Gerald Sanchez, EIS Team Economist. BLM, Las Cruces District Office, August 2, 1982.
- Tecolote Corporation. 1981. Taos Mineral Resource Inventory. Prepared for Bureau of Land Management, Albuquerque District. Contract No. YA-553-CTO-1088. Albuquerque, New Mexico.
- U. S. Department of Agriculture, Forest Service. 1982. Run Wild III-Wildlife Information Storage and Retrieval System (computer data base). Albuquerque, New Mexico.

- U. S. Department of Agriculture, Soil Conservation Service. 1968. Cabezon Area Soil Survey. Agriculture Experiment Station, Research Report 188.
- _____. 1980. Sandoval County Soil Survey (unpublished).
- U. S. Department of Commerce, Bureau of the Census. 1981. 1980 Census of Population and Housing, Preliminary Report--New Mexico. PHC 80-P-33. Washington, D.C.
- U. S. Department of Interior, Bureau of Land Management. 1975. Cabezon Management Framework Plan. Albuquerque, New Mexico.
- _____. 1975. Rio Puerco Environmental Statement Area Forage Inventory (unpublished). Albuquerque, New Mexico.
- _____. 1977. Final Environmental Statement for the Proposed Rio Puerco Livestock Grazing Management Program. Albuquerque, New Mexico.
- _____. 1979b. Ignacio Chavez Grant Intensive Inventory. Albuquerque, New Mexico.
- _____. 1979c. Management Framework Plan: Rio Grande Planning Unit. Albuquerque, New Mexico.
- _____. 1979d. Star Lake-Bisti Regional Coal. Final Environmental Impact Statement (#FES-INT-79-11). Washington, D.C.
- _____. 1980. New Mexico Wilderness Study Area Decisions. Santa Fe, New Mexico.
- _____. 1981a. Rio Puerco Raptor Inventory. Albuquerque, New Mexico.
- _____. 1981b. Upper Rio Puerco Wildlife Habitat Management Plan. Albuquerque, New Mexico.
- _____. 1981c. Wilderness Management Policy. Washington, D.C.
- _____. 1983a. Final Interim Management Policy and Guidelines for Lands Under Wilderness Review (amended). Washington, D.C.
- _____. 1983b. Albuquerque District Wilderness Draft Environmental Assessment. Albuquerque, New Mexico.
- _____. 1983c. New Mexico Wilderness Supplemental Draft Environmental Assessment. Santa Fe, New Mexico.
- U. S. Department of the Interior, Bureau of Land Management and New Mexico Department of Game and Fish. 1974. Interagency Browse Study - Ignacio Chavez Grant. Unpublished report. Albuquerque, New Mexico.
- U. S. Department of the Interior, Fish and Wildlife Service. 1976. Black-footed Ferret Investigation - Rio Puerco Grazing Impact Statement Area. Unpublished study done under contract to the BLM through the Fish and Wildlife Service. Albuquerque, New Mexico.

Waite, Donald D. 1972. Rio Puerco Special Project Evaluation Report. Santa Fe, New Mexico.

Walsh, R. G., Gillman, R. A., and Loomis, J. B. 1981. Wilderness Resource Economics: Recreation Use and Preservation Values. Dept. of Economics, Colorado State University. Fort Collins, Colo.

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